The Official Amstrad Magazine

November 1986 £1.00

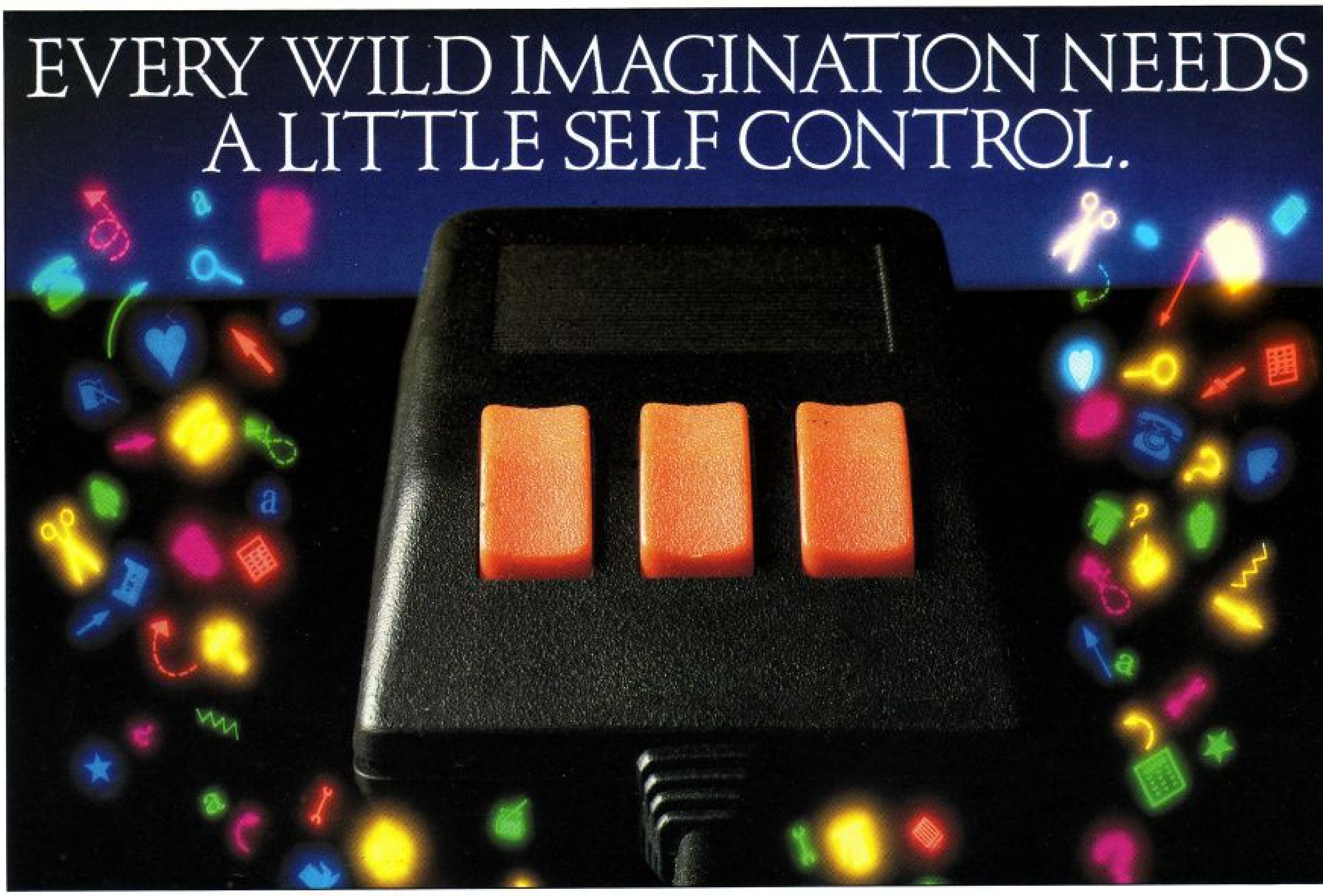
AMSTRAD COMPUTER USER

Write to Alan Sugar

Art packages compared: Rainbird v CRL v Melbourne House

Learn machine code







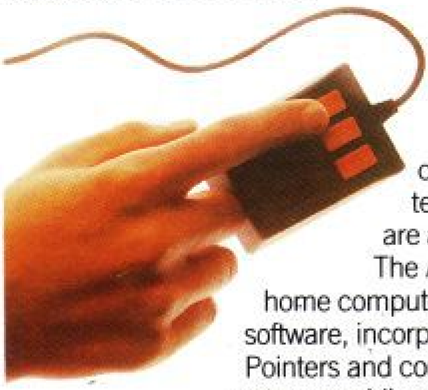
When we introduced our AMX Mouse to Amstrad CPC users the response was phenomenal. We didn't claim it was 'the best input device'. The press said it for us.

In fact it has received outstanding critical acclaim, and no wonder!

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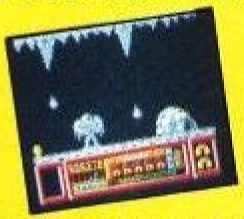
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AMSTRAD COMPUTER USER

The official magazine for all users of Amstrad computers

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AMSTRAD NEWS

Clock this from Citizen

In a brave attempt to make *Amstrad Computer User* run out of watch and time jokes, Citizen has launced three more printers.

The MSP 10E and MSP 15E are 80 column and 136 column printers. The major difference between them is the width of platen as they have similar performance characteristics.

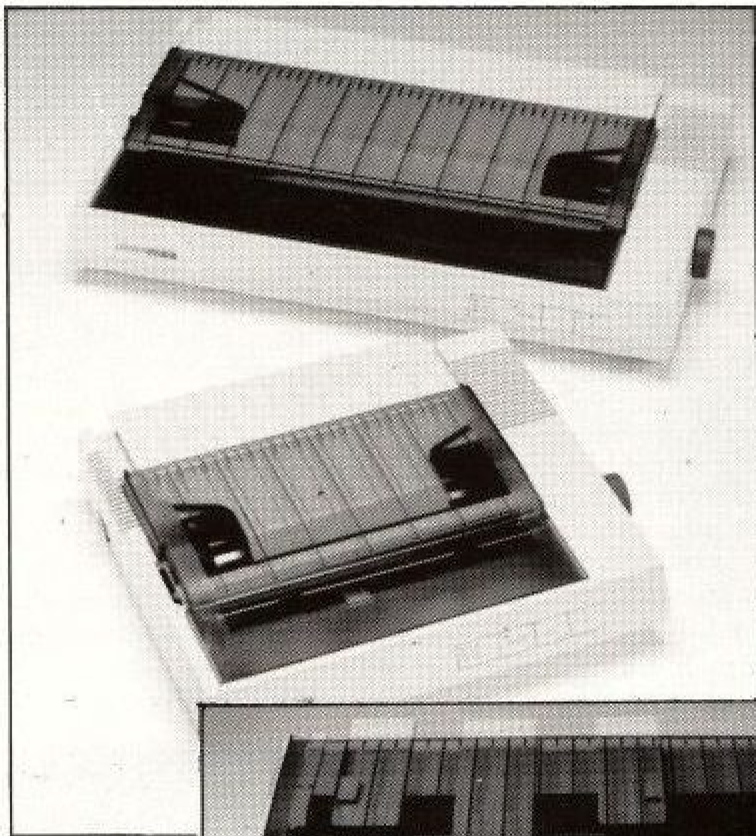
NLQ will give 40 cps while draft prints at 160. Both have a full bit image graphics capability and are Epsom and IBM compatible with a Centronics input as standard.

The 10E sells for £349 and the 15E at £449.

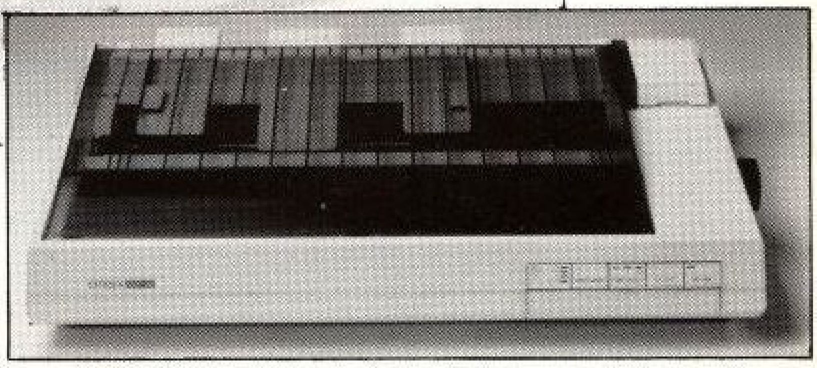
The third of the new printers is a 24 pin dot matrix printer using a 12x12 matrix on a staggered print head. (Yes, I don't know what that's supposed to mean either.)

This gives an exceptionally high quality of print at speeds of 200 cps in draft and 66 cps in letter quality.

The printer has a 132 column width and a serial and parallel interface as standard. Automatic paper load, a 24k buffer and additional fonts on plug-in cards makes it very special indeed.



Left: MSP 10E and 15E – both offer high speed draft and NLQ modes, IBM compatibility and 8k buffer



Right: HQP 45 – first of a new range 24 pin dot matrix printers from Citizen

Dan Dare to the rescue

A funny thing happened on the way to the duplicators.

It happened to Virgin's disc version of Dan Dare. The inlay says RUN"DISC. In fact to load the game you must type ¦CPM (¦ is achieved by Shift +@).

Virgin says the mistake was a result of a mix up between itself and the duplicators.

Still, it's nice to know there is a disc version.

Best seller on screen

Adventure gamers and fans of Dick Francis will be pleased to hear of a new game based on his thriller Twice Shy.

The game has been written by the Ram Jam Corporation for Mosaic Publishing which is currently working on The Archers and will shortly be releasing the Snow Queen.

It combines the usual form of illustrated adventure with an animated horse-racing game which can be played separately.

If you win at the races you return to the main adventure, which involves avoiding the heavy mob of the horse racing world. They want to relieve you of some intriguing game-usable software that has come into your possession and the money in your pocket.

An Amstard version will be available for £9.95.

Ariola Red Handed



Things haven't been going too well at Ariolasoft recently.

Despite several recent new releases, including Deactivators for the Amstrad (reviewed in this issue) the company has had to resort to eking out its meagre earnings with a spot of burglary. Caught in the act by a local photographer, the offenders' only alibi was that they were promoting their latest game They Stole a Million.

Despite wearing disguises the supects were traced back to the shop where they bought their designer stripey tee-shirts.

The three perps were Tigress designer Chris Palmer, Ariolasoft's creative development manager Mark Easton and programmer with Shirekilo, Edgar Belka.

Summing up at the trial, Mr Justice Wunce committed the three to 24 months' hard labour – they have to man the phones in Amstrad's Customer Service department.

Ah-Uh-Ah-Uh-Ah! and Ghunf, Thud!

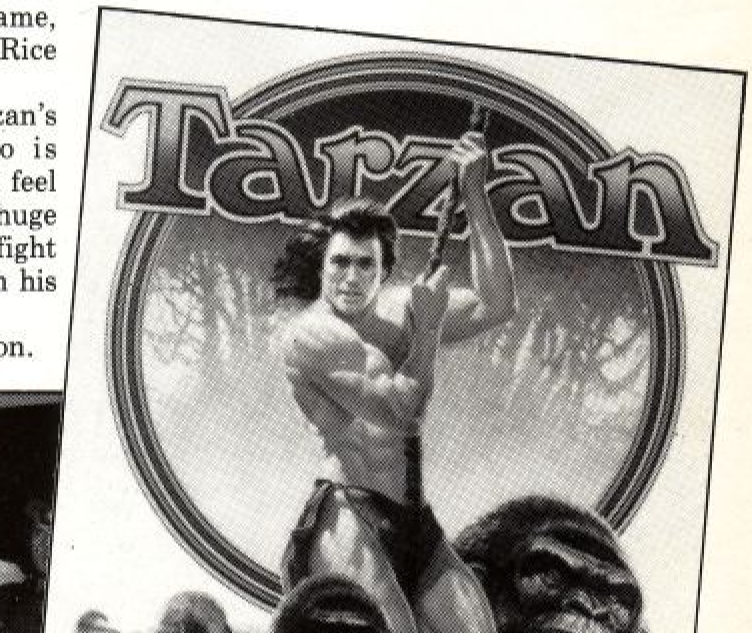
Judo Champion Brian Jacks was on the Martech stand at the recent PCW Show, possibly because he's been acting as a consultant for a judo game called Uchi Mata which Martech is about to release. Brian is very pleased with the results he has seen and claims that the game can be used as an accurate training aid.

Martech is also launching Tarzan – Lord of the Jungle, which it describes as a new arcade combat adventure.

The company says that Tarzan is the officially licensed version of the game, based on the hero created by Edgar Rice Burroughs.

The game is centred around Tarzan's quest for his mate Jane, who is kidnapped by hostile natives. (We feel sorry for the natives.) The jungle is huge and full of dangers and Tarzan must fight off the hostiles and wild animals in his search.

Price will be £8.95 – expect it soon.





Swinging lessons for Tarzan (above), while Brian Jacks shows how to deal with troublemakers (left)



activator
CASCADE GAMES LTD
After years of neglect many strange and dangerous life-forms have infested Antari. The fuel-rods so essential to her reactivation have been taken from the Power Chamber and lost in her web of decks, chambers and rooms. You must locate these and return them to their correct location. Many dangers lurk around every corner. Radiation will penetrate your **ACTIVATOR'S** outer skin. Time is limited.
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Long List from CRL

CRL is putting out a number of new releases for Christmas.

Among them is Bugsy Maroon, a game about a bunny gangster from Chicago. You must help Bugsy to become Public Enemy No.1 in a tough game of skulduggery, corruption and crime.

There's plenty of rabbit in this game as it features a menu driven conversation system that lets you talk to the other characters.

Bugsy Maroon is the result of a mega deal with the girls of St Brides. (Why do I get this vision of St Trinians with Beebs, hacking into the Ministry of Defence?)

The game is about to be released for the Amstrad and will cost £7.95.

Also from CRL comes news of a game you can really get your teeth into.

Watch out for Dracula, a new adventure game based loosely on Bram Stoker's original story of the blood sucking count from Transylvania.

The game features digitised graphics and rather than moving from location to location as in the usual type of adventure the player progresses to the next situation.

Again the game is almost ready for release.

Deus ex Machina will be a familiar title to Spectrum users, but being an Amstrad user you may not have heard of the game originally brought out by Automata.

Heralded as a fully animated television fantasy, the game is controlled by your home computer and synchronised to its own stereo soundtrack.

The game is something to do with a giant computer, containing DHSS, police and state records, going on the blink.

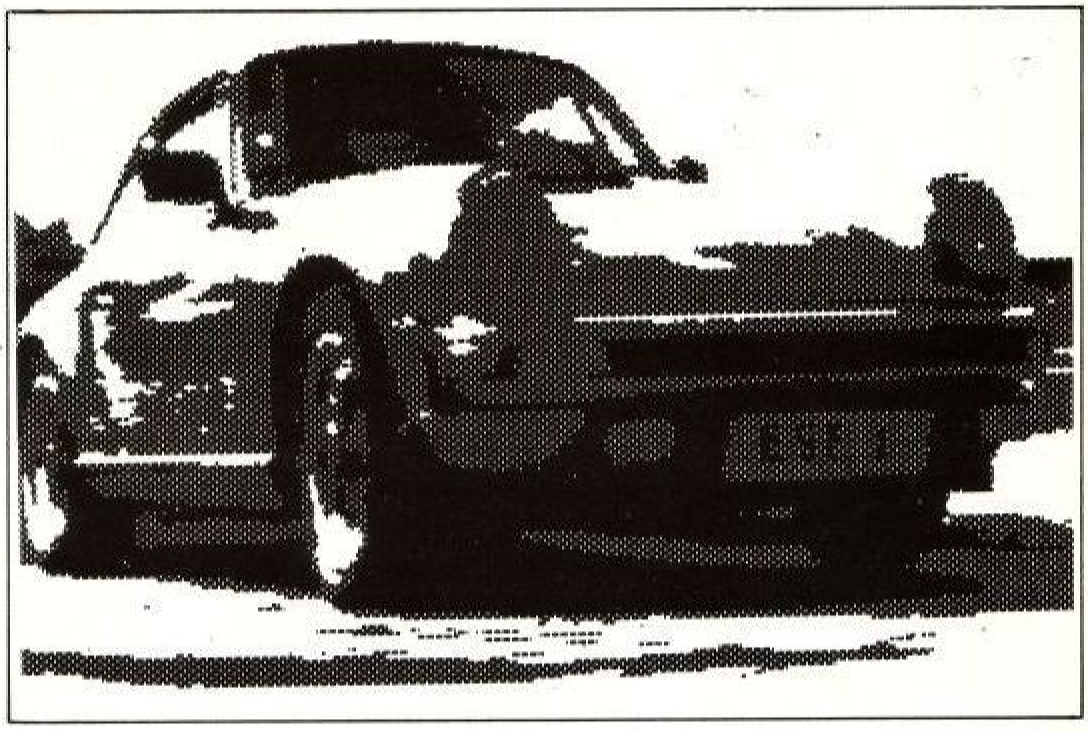
It should be available for the Amstrad by the time you read this and will sell for £8.95 on CRL's Nu Wave label.

CRL's boss Clement Chambers tells me that the new Dr What game is nothing to do with any television programme.

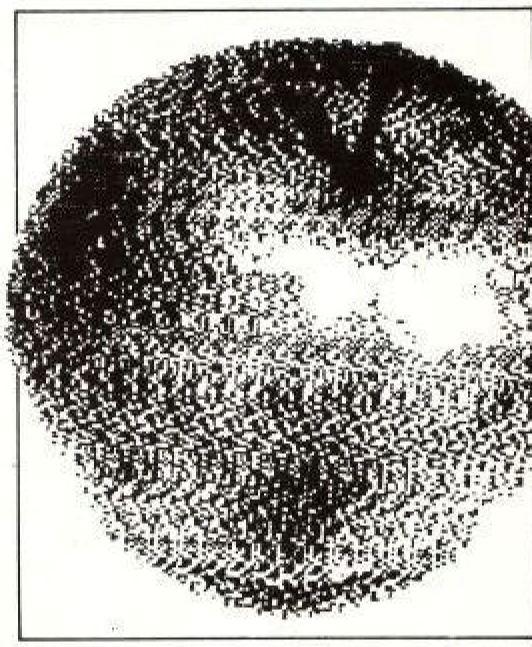
You have to guide the four doctors, called What, Why, Where and When, to a location in time and space. To get there they need to use a Tryidis time machine.

You need to solve puzzles such as how to get past the Dalek – sorry, robot monster – by throwing a cap over its eye or fix the time machine with a baseball bat.

Now I understand why CRL has been quiet for so long.



Grabba frame on Joyce



Exciting news from Electric Studio this month – a video digitiser for the PCW 8256/8512 and CPC 6128.

This device will allow a picture from a video recorder or camera to be displayed and "grabbed" by the computer. Once grabbed the screen image can be saved to disc or printed out.

Screens saved in this way can be manipulated with the ESP light pen and mouse graphics programs to do such things as add text.

The package includes the interface and necessary software for the reasonable price of £99.95.

DAVE and PAM by ALEX & SPITAL

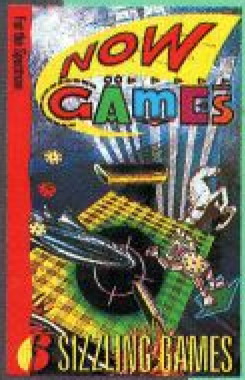


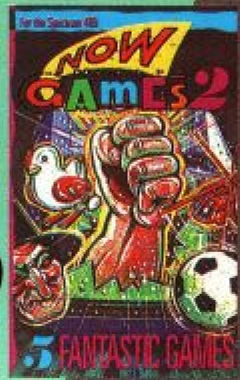




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NICK FALDO PLAYS THE OPEN

Mind Games

This beautifully presented simulation features 900 scrolling screens of authentic action over the 18 holes of the Royal St George's course in Sandwich.

SORCERY

Virgin Games

This beautifully designed arcade adventure features great graphics and gameplay as it transports you to a land where evil must be defeated and the power of good restored.

CODE NAME MAT II

Domark

You are the Captain of Centurion II in this exciting shoot-em-up. Your ship has a range of weapons, shields and a tracking system, but you must decide the best strategy to eliminate the attacking Myon craft.

EVERYONE'S A WALLY

Mikro-Gen

This is a multi-screened arcade adventure featuring excellent cartoon graphics and lots of humour. Use your ingenuity to get the gang working and uncover the combination to the wages safe.

VIEW TO A KILL

Domark

Spectacular 3 part multi-screen arcade adventure based on the James Bond film. There's a car chase around the Eiffel Tower, a rescue from a flaming City Hall and some code-breaking at Silicon Valley.

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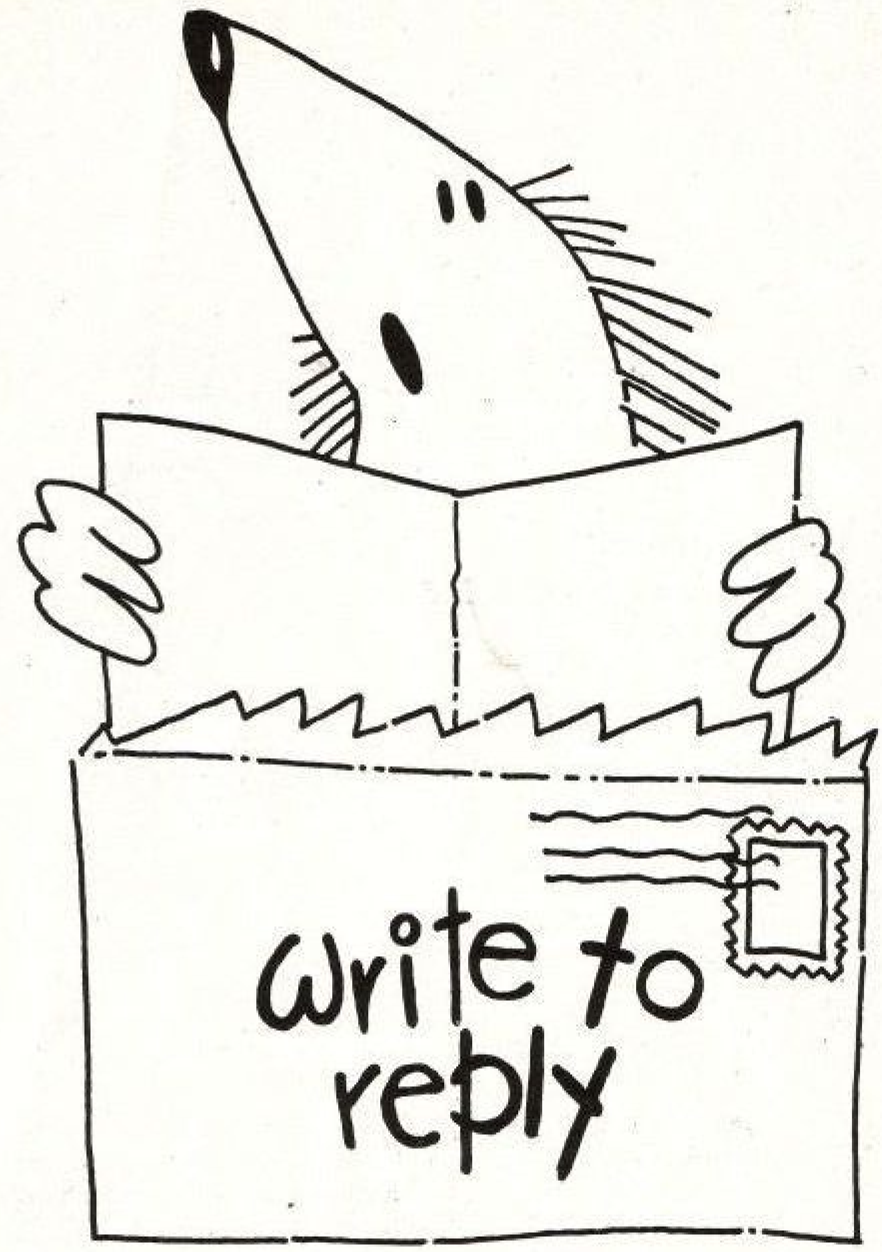
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Name .... Address ....

....

Virgin Games Ltd, 2/4 Vernon Yard, Portobello Road, London W11 2DX

Please bear in mind that the views expressed herein are not necessarily those of Amstrad. Be assured that all your views are given thorough consideration. This letters section is the Amstrad Computer User's own forum.



Joyce games

As a user of PCW 8256 I am interested in any new piece of software that comes along. I was very pleased to read that some software manufacturers are going to start producing games for the PCW and I have noticed that games such as Batman and Fairlight have started to appear in more and more shops here.

I am writing to ask if Amsoft would consider (or are considering) making a version of Elite for the PCW? Surely with eight times more memory the PCW would have a much smoother, faster game than on the BBC?

B. Treadgold,
Edinburgh.

ACU: *There are loads of new PCW games in the pipeline but you have to realise that loads of memory can make a programmer's life more difficult. Smooth graphics on a high resolution screen are very tricky. Firebird is thinking about a PCW version of Elite but while you are waiting it is worth getting a copy of Tomahawk from Digital Integration.*

Spook slip-up

I read all computer magazines concerning the Amstrad, and – Creep Creep – I think your magazine is the best. But your listings are no better than the rest for mistakes, unfortunately.

My most recent complaint is the haunted house program in the September issue where the save HH code address should have been 30000 and not 20000 – so my Dad says and he isn't much brighter than I am! But at least he can sort out your programs.

Tracy Williams,
St.Austell,
Cornwall.

ACU: *Your Dad is right – the magazine should have read SAVE "HHCODE",b,30000,4800. The mistake was only in the instructions, the listing was perfect.*

You cannot be serious

I am an over 40 housewife. I've had a CPC 464 since go. I have all the *ACU* mags including the ones with the boring business bit in the middle.

My problem is I feel guilty because I don't have time to be a "serious programmer" – I am too busy enjoying playing the games.

My first add on was the DMP1 printer, my second a picnic table to put it on and the last was a big desk to cope with the cassettes.

I dive straight into the letters page to find the send up. I read them all twice, because I don't understand the question – never mind the answers.

Hasn't anyone ever dared to confess that they are not serious users? If so you haven't printed their letters, Australians and lorry drivers excepted.

If I wasn't so obsessed with solving one of my four adventure games maybe I would look further than the keyboard or joystick. To this end I read Hairy Hackers Haunt, but he's not given me any clues yet – just a good laugh.

Do the adventure game compilers realize they are turning some of us average intelligent humans into mindless idiots who have the last game on the computer whirling around their head until the next time they load it?

Worried,
Scunthorpe.

Computer tutor

Earlier this year I purchased an Amstrad 6128 and although a lot of software is being made available on disc this does not include much educational software.

I would be grateful for any information you could give me regarding adult educational programs, not necessarily to 'O' level.

S. Campbell,
Loanhead,
Midlothian.

ACU: *There is not very much in the way of good educational software, partly because the market is limited and partly because anyone who does venture into the educational arena has their programs pirated out of existence. Try School Software in Ireland (010) 353 61 27994 who seem to have programs for most age ranges.*

Music down the phone

The BBS which I run has currently opened up a lot of new sections to cover the ever growing information required by computer users. One of these is a Midi section. I hope the following will allow readers of your magazine to hear about the Access BBS and all its facilities.

The BBS is run on a Vision IBM AT clone running at 8Mhz. The software used is the Fido BBS (including Fidonet). The modem is a Quattro Card

2400, supporting V21, V22, V22Bis and V23.

The BBS runs 24 hours a day, seven days a week on 0905 52536. For editors and companies its use is free. For other users there is a once only fee of £5 which is spilt into five levels – in £1 increments. Nurd Access is free (lowest privilege). Extra Access is £5 (highest privilege).

J. W. Brooks,
Access Bulletin Board System,
Warndon,
Worcester.

ACU: The advertising bill is in the post.



Lost adventurers

The Adventurers Club, which had about 2,000 members when I last asked, is showing signs of being in trouble.

The last two issues of their newsletter have not appeared. Their phone (01-794 1261) was first connected to a recorded message about new management and now goes unanswered.

Several club members have confirmed the above from their own experience and a friend who recently called at their registered office (64c Menelik Road, London NW2 3RH) was met by a woman who told him it was just an accomodation address for post. In fact, I've previously had a meeting there with Henry Mueller, the "secretary" who runs the club, and it certainly looked like his home.

My only involvement with the club dates back to December 1985, when I agreed to become Honorary President. This just involved writing an unpaid column on matters adventurous in the newsletter for a year, with no involvement in the club's finances before starting and everything seemed fine at the time.

I now cannot contact anyone at the club and am understandably worried for its customers. I would advise anyone planning to join the Adventurers' Club, or buy mail-order games from it, to satisfy themselves as to its financial stability before sending money.

Pete Austin,
Level 9 Computing,
Weston-super-Mare.

Review reviewed

I have noticed your review of Graham Gooch's Test Cricket from Audiogenic in the September issue of *Amstrad Computer User* (page 76). As I am the author of the CPC and PCW versions of the program, I thought I would write to you about a point raised in your review – that of the screen mode used for the view of the bowler, batsman, wicket keeper and slip fielder.

I had a chuckle to myself when reading your comments on this as I had wondered if anyone would be observant enough to notice that this screen is actually made up of two modes. If you look closely, you will see that the graphics contain six different colours and thus must be displayed in mode 0.

The text however, needs to be higher res to fit that number of characters across the top line of the screen and is displayed in mode 1. This I achieved by a mode change triggered by the fast ticker interrupt, a feature of the CPC's excellent event system.

I assume that the picture of this screen in your review was taken after the program had been interrupted and frozen *(correct – Ed)* somehow as the top line appears to be shown in Mode 0 instead of mode 1 (or is my copy blurred?). Mode 0 would be the default mode in these circumstances as Mode 1 is only switched in temporarily for the top line of the screen.

A question asked in your review is "what affects the players' performance?". This is based on the players' batting and bowling averages which can be viewed or changed through the team editor accessed through the top menu.

When I accepted the contract to convert this program from the C64 original I knew nothing of cricket and had little interest in it but because the original program was so detailed a simulation of the game my interest grew and I've now become hooked on cricket – to a certain extent.

Anyway, thank you for reviewing the program. I think it was a fair review and would like to compliment your publication on its standards generally.

Graham Blighe,
Hampshire

ACU: Thank you for taking the trouble to write, it's always good to know what programmers think of our reviews . . .

A kind of magic

I have succeeded in producing graphics from music cassettes placed in the Amstrad datacorder.

```
10 X%=0: MODE Z: MOVE 0,0
20 Y%=0: FOR Z%=0 to 7:
Y%=Y%+INP(&F500): NEXT:
Y%=Y%/6
30 DRAW X%,Y%:X%=X%+4:IF
X%>639 GOTO 10 ELSE 20
```

Basic has a job keeping up with the tape activity but this program works quite well.

Ian Campbell,
Southampton,
Hampshire.

ACU: Brilliant. This is a really fun short program, but we did find it necessary to type OUT &F600,&10 to get the tape moving. (Thanks Vax).

Dear Nigel, Liz and Colin

Thank you very much for the complimentary review of our game Killapede. We have been writing programs now for a couple of years and people seem to have

avoided reviewing them, but that's life.

I thought I'd just mention that our high score presently stands at 370,000 (and that's without the cheat option which is activated in pause mode.) Please note that the price of players software is £1.99 – even better value than you thought.

I would like to ask a favour on behalf of all free-lance programmers – please include the author's name, it means a great deal.

Philip and Andrew Oliver,
Complex Computer Software,
Trowbridge, Wiltshire.



The case of the disappearing case

In reply to M Berris (*ACU*, September) I have a theory about the missing 3 inch disc cases. It is not dissimilar to the phenomenon observed among clothes hangers. A moderate number of basic wire clothes hangers left alone in an empty closet will yield one of two results when the closet is opened after a decent interval of time.

They will usually be observed to have undergone a population explosion to be envied by Australian rabbits and will spill out at your feet. Less commonly, they will have been affected by a mysterious plague and will have been totally decimated. When this happens there will not be a clothes hanger left in the entire house.

I suspect that disc-less cases are particularly vunerable to an illness known among humans as slipped disc. Once a disc slips it is nearly impossible for it to be reunited with its case. My discs are quite susceptible to this disease so if you know a cure please let me in on it.

Bradley W Dean,
London.

Hello Amstrad 464 & 6128

My name is Ayhan Catintas. I'm 19 years old and I'm looking for a computer friend. My address is: Millet Cad. Vidinli Ap. No. 133/6 Capa, Istanbul, Turkey.

I'm waiting your letters.

Rambo bug

To get the prisoners on Rambo you must switch to knives and shoot the criss-crossed building at the bottom of the camp, then when they have all come out you must repeat it. In my copy of Rambo there must be a fault, because when you do repeat it the criss-crossed building changes into a hut. Weird?

By the way, if US Gold wants someone to program Zaxxon I would be pleased to do it because I can do a direct conversion from the arcade machine.

Keith Orbell,
Waterbeach,
Cambs.

ACU: Amstrad is converting Zaxxon. A very early copy which we had peek at looks very promising.

Simple Welsh

Following the letter by Mick Tems about the difficulty of producing properly accented Welsh using LocoScript I must express my disappointment that vowels y and w with circumflex accents are not available directly. However, the way round this restriction may interest fellow Welsh users and anyone else needing uncatered for accented letters.

Simply insert another line above the word containing the required accent. Then give that line a line spacing of zero for non capital letters and half for capitals. To give a brief example:

(*circumflex ***) (+LSpace0)**
Dwr (+LSpace1)

on the screen is:

(* circumflex over w***)**

on the printer.

Hwyl fawr,
Richard Morse,
Pwllheli,
Gwynedd.

Galaxians avenged

In your reply to Keith Talbot's letter (ACU, September) you claim that joystick control of Galaxian's Revenge is out of reach of a simple change to the basic program. However, the required change can be obtained with one line of basic:

```
445 POKE &5151,74 : POKE &5169,75 :
POKE &5251,76.
```

D.J. Davies,
Ipswich.

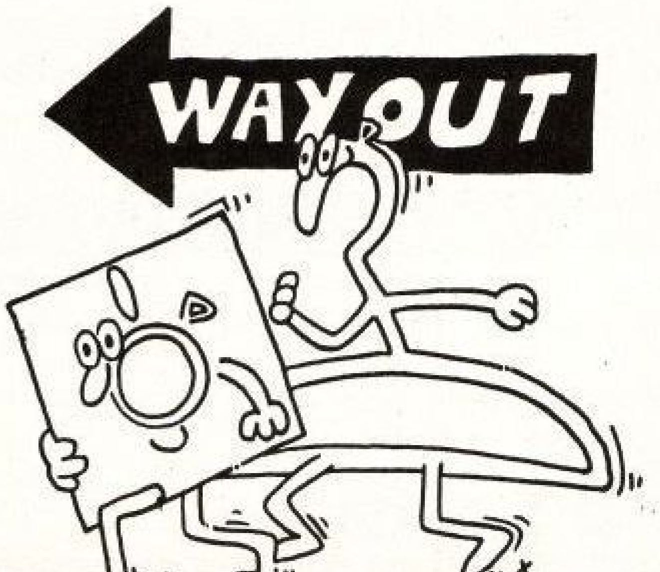
ACU: I.A. Napier from Norwich also put us to shame with his conversion:

Add the following command to the end of line 440:

```
:POKE &5151, &4A:POKE
&4B:POKE &5251,&4C
```

These commands change the number of the key being tested from keyboard to joystick (Left, Right and Fire respectively). Other values may be substituted if you still want to use the keyboard, but assign different keys". Thanks I.A.

ACU



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SEEK AND YE SHALL FIND...

Into adventures with Bill Brock

Graphics yea or nay?

Many of the adventure programs that are advertised today make a point of raving about their graphics. Some, it is true, are quite remarkable – but do we need them or are they mainly there to sell the game to the inexperienced adventurer?

There is no doubt that good graphics can transform a mediocre arcade game but in pure adventures I would rather see the effort and memory used to improve the game itself.

When you read and enjoy a good book it is because it is well written, has a good plot and lets your mind create the scenes from the written word. Your imagination transfers you to the scenes described on the written page and just the words "A rune carved knife" conjure up a far more detailed picture than is practical to produce on the monitor screen.

I am far from opposed to having graphics with my adventures but I do think a slavish obsession with pretty pictures is not the way to improve an adventure game.

Last month we looked at Mandragore from Infogrames, but I did not talk at length about its simple chunky pictures – why? Simply because the appeal of this game was not in looking at works of art but in staying alive to solve a series of quests – the graphics are there to inform rather than be admired.

Get involved in this game and you could well end up with sweaty palms and a total dedication to keeping your team in tip top condition.

That masterclass purveyor of fine adventures, Level 9, now give us graphics in addition to plenty of dramatic text. But the graphics are not overdrawn – they simply set the scene, leaving your imagination to fill out the details.

Old Scores from Global Software has fine detailed graphics, but only five of them. Pictures here simply tell you which buildings you are in or near while the text supplies the real atmosphere.

The other extreme is found in the adventures from Interceptor Micros – Forest at World's End and Jewels of Babylon both have superb graphics but only very limited textual descriptions. Both are good and have been the starting point for many a now hardened adventurer.

What do you think? Would you rather have the emphasis on graphics or text? Do you find some adventures really transport you to another dimension, where you sweat to stay alive? Do you just like the stimulus of solving logical puzzles, regardless of pictures or depth of text?

You, the Amstrad Adventurer, are now someone to be reckoned with. You have a purchasing power to make writers and distributors sit up and listen. Write in and let us know what kind of adventures stir your blood.

From the depths of time . . .

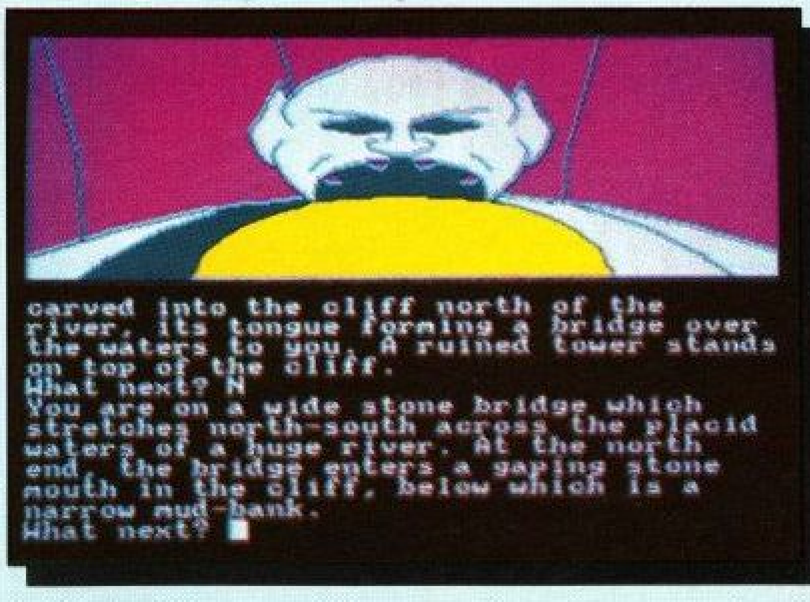
For some years I have been recommending adventurers to delve into Level 9 early works. Colossal Adventure is an excellent interpretation of the computer's first great adventure from the dawn of computer history (well the seventies anyway). And, to help the beginner, Level 9 produce the best hint sheets available.

With these you need not find out more than you want to at any point, yet at the same time you can learn the basics of how adventure games are constructed and solved.

Two other early Level 9 games, Adventure Quest and Dungeon Adventure, are both cracking good games to solve and equally recommended – providing you like the general scenario of swashbuckling swords and sorcery.

Now Rainbird, an offshoot of British Telecom's computer software arm, has released Jewels of Darkness, a compilation of all three games. Rainbird only distributes up-market software, so prices are not cheap – but what you get should be worth what you pay!

This is certainly true of Jewels of Darkness. The three adventures still have the same locations but the text



Jewels of Darkness

(originally very good) has been extended and the operating system is the much improved version currently found in Level 9's latest products.

Other features are a large vocabulary and recognition of such complex sentences as GO NORTH AND DROP ALL BUT THE LAMP AND THE AXE.

The games were originally text only but these latest versions have a full set of graphics. They also have RAM SAVE/LOAD and Level 9's special OOPS command that will step you back to the last location, even following something fairly catastrophic like being killed! The PCW version uses the extra RAM to provide multiple OOPSes.

Jewels of Darkness is available for all Amstrad computers, including the PCW8256 on both disc and cassette.

Considering that you get all three adventures the price of £14.95 (£19.95 disc) makes it a must for anybody who calls himself an adventurer.

The instructions are good, with many examples of how to enter commands. They also include brief scenarios for the three adventures and as an added bonus a 40+ page novella The Darkness Rises by Peter McBride. This will take you still deeper into the fantasy world of Jewels of Darkness.

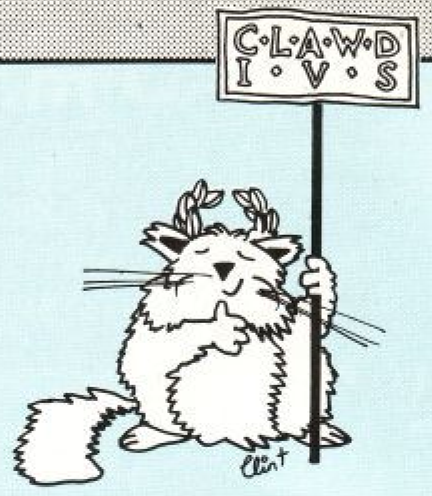
Read and enjoy, but make sure the doors are locked and you have a sword within reach!

Delving into Colossal Adventure again was just as enjoyable as it ever was but the new features make the whole game just that bit easier to play. To speed up play you may type ahead while the pictures are being drawn, but they are drawn quickly anyway. If you want to repeat some moves at maximum speed, choose WORDS and revert to a text-only display.

Although all the main locations are in the same places as before, I did find that the vending machine (spare batteries for your lamp!) is in a different position within the maze. That did throw me for a while as this maze is almost impossible to map.

All I will say is that the vending machine is five moves from the west end of the long corridor. As you can move N, S, E, W, U and D, this gives you a fair amount of space to explore!

For all I say about graphics in adventures, I have to admit that those in Jewels of Darkness improve the original text only games. A pictorial representation of a location is certainly easier to recognize than text alone.



The programs are protected by the Lenslok system. Be prepared to squint through the plastic lens that comes with each game to decode the scrambled letters shown on the screen. I hate these things. I must be cross-eyed or something – they never seem to work first time.

The graphics are fairly simplistic, with very little fine detail to detract from the picture my imagination has already conceived. Level 9 has also got program compression to such a level that the memory used by the graphics is not affecting either the depth of text or the facilities offered by the command interpreter.

Although I have not yet worked my way completely through Dungeon Adventure or Adventure Quest they too appear to be just as improved as Colossal Adventure. There should be no reason on earth why an Amstrad should be without this classic package.

Cradle snatcher?

Do you have young children in the house, do you want to introduce them to the joys of adventure gaming? This could mean less time for you at the keyboard, but then they may be able to help you with the odd puzzle in the future . . .

Mirrorsoft has a number of fine educational games aimed at the very young. Caesar's Travels is an obvious adventure primer, not so much an adventure in the normal sense, more an interactive animated story.

Caesar the Cat first appeared as an arcade game for children, noteworthy for the excellent animation of Caesar himself. Caesar's Travels is a multi-choice illustrated story with 18 different endings, each dependent upon the choices made as the story unfolds.

Numbers and colour recognition play a part in the story and a key card designed to fit above the number keys helps show the choices to be made. Sound effects complement the story, with Caesar purring or crying as the story demands.

A book is included with the cassette. This mimics the program, even to the choices to be made as it is read. So Caesar's Travels need not stop when the young one is thrown off the computer – there are even a few pictures to be attacked with crayons or paints. Go for it – start them young!

Murder Franglais

Last month Mandragore, now L'Affaire Vera Cruz. Infogrames obviously means to make a mark on the British software market. There certainly seems quite a line up of interesting titles due to hit us in the months to come. The English Channel must be fairly buzzing with the passage of translated programs.

Vera Cruz, a young lady of rather dubious character



Caesar's Travels

appears to have got herself terminated with extreme prejudice. It is up to you to find the perpetrator of this dastardly deed.

You play the part of a Detective Sergeant in the Crime Squad at St. Etienne in the Loire valley. On August 8, 1986 you are informed of the discovery of a body in an apartment block in the town. From the caretaker's description it seems to a case of suicide.

You gather your team and go to the scene of the crime. Here you must be at your most observant and make notes of anything you think may be of consequence. This done you must return to the police station and pursue your investigations using all the methods available to a modern police force.

The program is on both disc and tape and loads in two parts. The first produces a display of the dead girl lying on the floor of her apartment. To allow the forensic team to do their job properly you may not touch anything. This does not stop you looking.

Using the arrow keys you can move a red square around the scene of the crime and take a closer look at anything that catches your eye. Pressing the COPY key will enlarge what is in the square – but only if it has some bearing on the case (pressing COPY twice may be beneficial).

There are over 2000 places in which to look, so you can either use your intuition or be very methodical and check the lot.

Make a note of everything you have found, load the main program then type in your list of finds. Evidence is keyed in with a space between each item and only when you have finished keying it all in – press Enter. Beware of pressing Enter too soon as you cannot return to this stage without reloading the second part of the program.

Now the work really starts. You have a display showing a police computer terminal below which is a menu of five possible types of action. There is also the option of having all evidence shown on the terminal appearing on your own 80 column printer. If you have such a printer use it, it will save you quite a bit of time copying out everything manually.

The five main options you have are Message, Examination, Statement, Comparison and Arrest.

Message: Allows you to use the computer terminal to make inquiries of various sections of the French State Police Force. These include local and district police squads, the Judicial Research and Comparison Centre at Lyon, the Vehicle Registration Department and a couple of prisons.

Examination: Permits you to request such additional checks as an autopsy or a handwriting analysis.

Statement: Enables you to get a written statement from anyone that you can name and give an address for.

Comparison: Here you can compare an alibi or evidence with facts collected during the investigation. This facility only works when carried out on information obtained from a written statement.

Arrest: Is your final option. When you believe you have sufficient evidence of someone's guilt you may try to arrest him. The computer will have taken note of all that you have done to solve the crime and will take appropriate action!

Inspecting everything possible at the scene of the crime is very important, as is entering this evidence



L'Affaire Vera Cruz

when you start the main investigation. Your chief lines of approach are via the Messages and Statements.

With the former a code and destination are required before you ask your question. For example, to contact the central research centre at Lyon, you must first enter CRRJ LYON, followed by your request for information. This may seem a little confusing at first and is made more so because on this type of input you cannot delete a wrongly typed character.

Almost every inquiry that is answered positively will give you a further lead, perhaps a name – or nickname – or another case the police are working on. From these leads you can pursue your investigations, building up facts that will incriminate the guilty party or making links between the different people involved.

Once you have an address where you think someone may be found, you can get his Statement. This again will give you further clues to follow up. Both Statements and inquiries involving people will produce photographs of those persons concerned.

The instructions imply that on any request you should type in as much information as possible. In some ways this is a little confusing as there is always the worry at the back of your mind that you are not getting an answer because you have not typed in enough.

I found that the command interpreter was really only looking for a few critical words and more often than not would respond in the case of a person to just BILL BROCK (or BROCK BILL).

The Examination option must not be confused with the adventure command of EXAMINE. It has only a limited use in this program and really only understands very few types of examination. The same could be said of the Comparison option. Both are useful, but without giving away any clues that may spoil your investigations – concentrate on inquiries from other police Departments and on Statements.

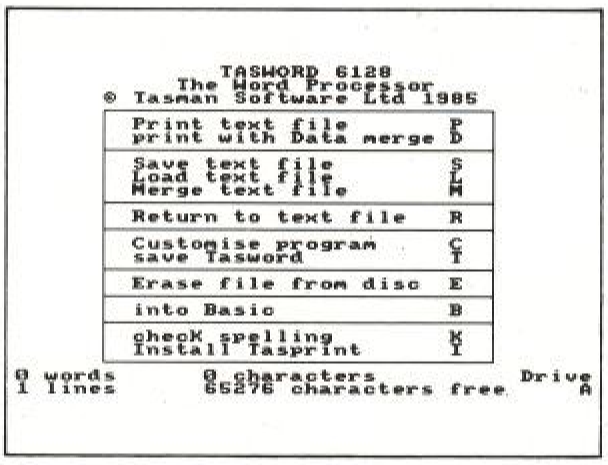
The Vera Cruz Affair is a fascinating game and could well produce many similar investigations in the future. There will undoubtedly be a few initial uncertainties as to which Police Department to direct your inquiries, but having got used to the French judicial system, adventurers should find this one refreshingly different.

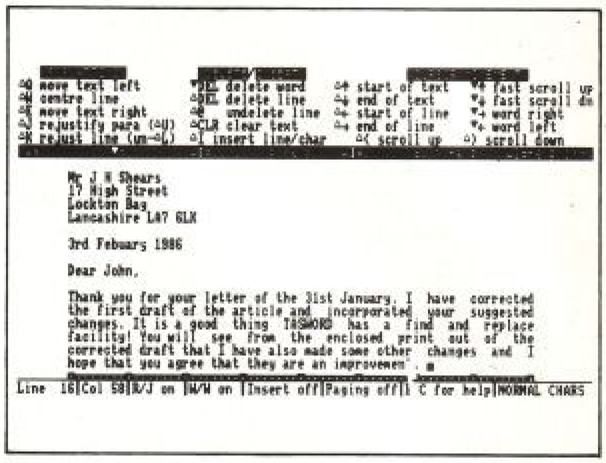
Observation is the keynote. Make notes on all people mentioned – even if not directly by name! ACU

TASWORD 6128

THE WORD PROCESSOR FOR THE AMSTRAD CPC 6128







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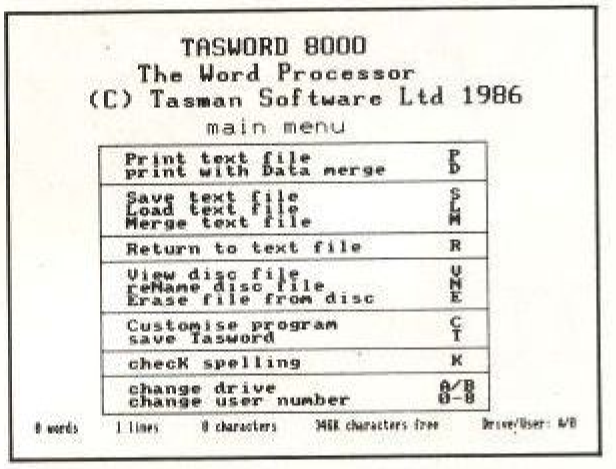
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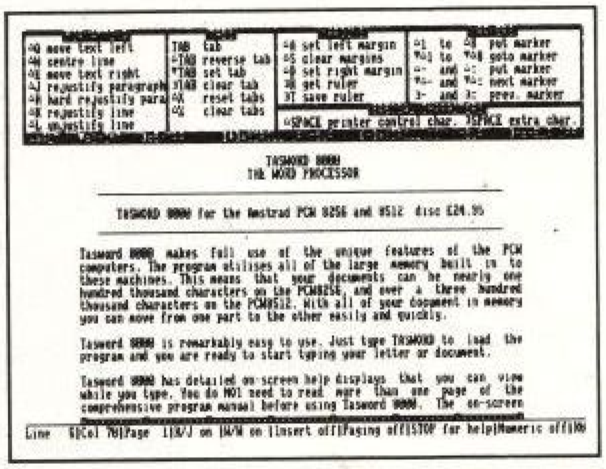
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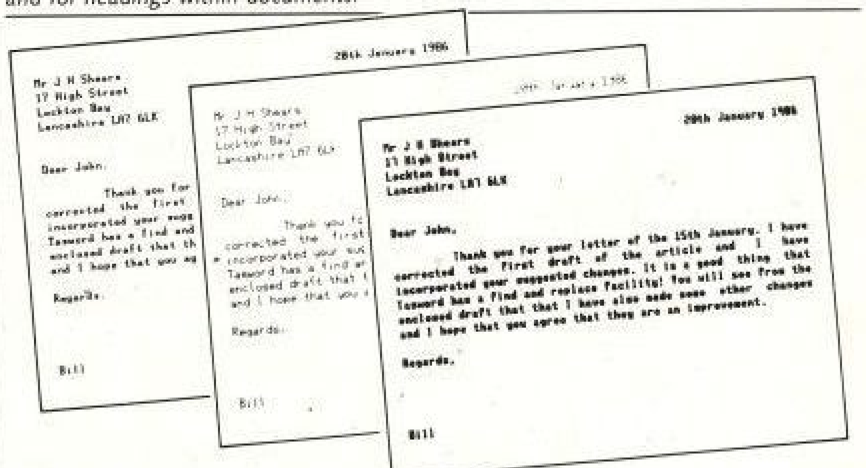
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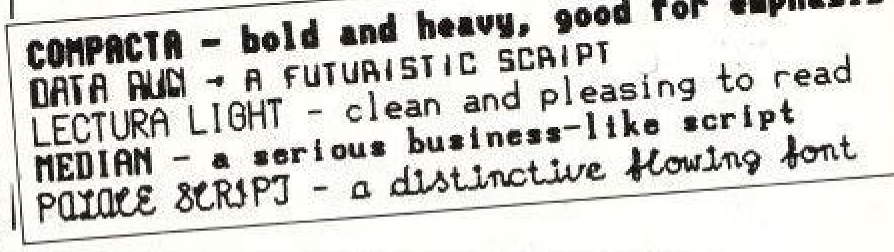
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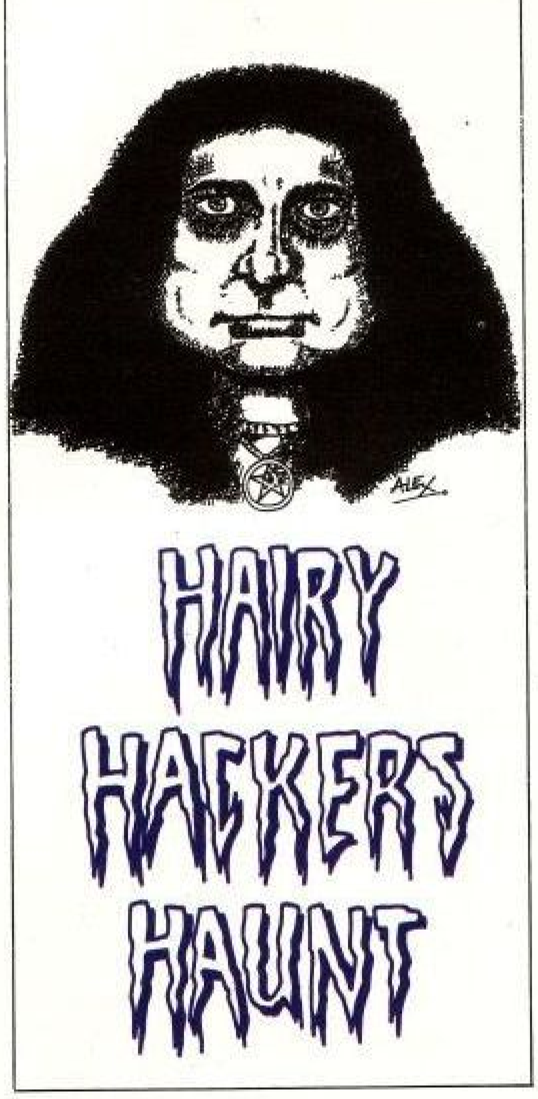
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Among other news last month, a breed of flea that thrives on word-processors was discovered. It's called a Joyce-Tick.

Unfortunately, my "Pokes for an Infinite Barcloyds-West Bank Account" article was stopped by the editorial staff, who have now all suddenly bought villas in Spain.

Rougher Rambo

Instead, we have yur a progette for infinite lives for Rambo (who?), kindly sent in by A. Norman in Essex. I thought there were a lot of Normans in Essex a while back? Anyway, his Beefcake Booster lets Rambo make Vietkong kebabs with even less personal damage than in the film. So, here's the clever bit, slightly modified by me to have a checksum on it after I typed it in wrong.

Run this program, rewind and play your Rambo tape and all else will happen as if by magic. For his efforts, Mr. Norman gets (Ta da da da da daaaaa) Poke of the Month! (Yeaaaa, Cheer). Just let us know what game you want for your 'straddy, and we'll do our best and

```
1 REM INFINITE LIVES FOR RAMBO
10 DATA 21,9C,8E,36,00,23,36,00,23,36,00
20 DATA 21,AB,8E,36,00,C3,00,8F,21,2D,22
30 DATA 36,F8,21,40,20,11,40,00,01,F2,01
40 DATA ED,B0,21,40,00,E5,21,00,BB,E5,21
50 DATA F2,01,E5,21,07,B8,E5,21,BB,02,E5
60 DATA F1,21,EA,B1,11,D9,B1,F3,C9
70 MEMORY &2000:CHK=0
80 FOR X=&9500 TO &953F
90 READ A$
100 Y=VAL("&"+A$):POKE X,Y:CHK=CHK+Y
110 NEXT
120 IF CHK<>6306 THEN PRINT "Whoops! Err
    or in DATA.":END
130 LOAD""
140 CALL &3A6A
150 LOAD"!",&2040
160 CALL &9513
```

probably more.

To all those who sent letters in, thanks. To all those who didn't, give it a go. In fact, there was so much male mail last month (maybe the women don't have any problems?) that I've decided to have a "Hackers In Agony" section. How is this different from the Q & A session by the ed? I dunno, you decide.

First off, a self-confessed, absolute beginner's letter. Glenn Cahill in Galway is asking what I mean when I say "Wind past the loader and run this program."

Well, reading the manual tells you all about typing and running programs, and despite cutting comments blasted around by various sections of the press I don't think there's any book that's any better. Most of them have just had "Spectrum/Oric/Electron" replaced with "Amstrad", and some still even refer to the Break key.

Winding past the loader refers to the first program on the tape, which loads all the others. Find out where it ends (read up on the CAT command) and that's it. OK Glenn? There, I'll frame your letter with the other one.

Here's the other one, from Kenneth Guest in Cheshire. He asks why he gets 'Type mismatch on line 40' in my proggyette to put screen output to the printer. Well, there's this old joke about the person who said "... and I typed 'mismatch', and now it comes up with Syntax Error."

Obvious things that people miss when they have checked it all through six times and found no mistake, honest, is to have confused O (Oh) with zero or to have put '!' instead of '. And there's another one that everybody misses. You have probably forgotten the dollar in VAL("&"+a$), or typed S instead of $. Right, back to pokes.

A lot of people have been pokeing around at Roland on the Ropes. Mind you, it's been about for a while. Anyway, this must be the definitive luxury poke for it, with infinite lives and bullets, and a complete map of the maze available on request by pressing the H key. Shame it's really only for disc versions on the 464, but tape owners might want to try a bit of juggling with three tapes. 664/6128 owners are out of luck.

Rope adder

It comes in two parts. Part 1 is the loader for the cheat code, part 2 the program that mixes the cheat code with the real game. Here's part 1, and don't run this with any roms other than a disc drive on your machine:

```
10 REM BASIC LOADER FOR ROLAND ON THE RO
   PES CHEAT
20 RESTORE 110:READ a$
30 add=&AEE4:chksum=0
40 WHILE a$<>"END"
50   a=VAL("&"+a$):POKE add,a
60   add=add+1:chksum=chksum+a
70 READ a$:WEND
80 IF chksum<>26475 THEN PRINT "DATA err
   or !":STOP
90 SAVE "CHEAT.COD",b,&AEE4,220
100 :
110 DATA 20,7F,7F,7F,7F,7F,7F,D2
120 DATA 94,95,91,7F,3E,10,32,5D
130 DATA 8F,C3,AA,BC,3E,10,32,03
140 DATA 81,C3,AA,BC,3E,2C,CD,1E
150 DATA BB,2A,DD,35,C8,E5,3E,01
160 DATA CD,0E,BC,21,01,01,CD,75
170 DATA BB,26,00,06,18,C5,CD,87
180 DATA AF,C1,24,10,F8,26,00,3E
190 DATA 02,CD,81,AF,C4,52,AF,AF
200 DATA CD,81,AF,C4,6C,AF,3E,09
210 DATA CD,81,AF,28,EA,3E,09,CD
220 DATA 1E,BB,20,F9,AF,CD,0E,BC
230 DATA 21,34,06,01,14,17,CD,DE
240 DATA 2D,CD,A0,2D,E1,C9,7C,FE
250 DATA 09,D0,C6,18,67,E5,21,19
260 DATA 01,CD,75,BB,E1,CD,87,AF
270 DATA CD,5A,BB,7C,D6,17,67,C9
280 DATA 7C,A7,C8,25,E5,06,00,AF
290 DATA CD,4D,BC,21,01,01,CD,75
300 DATA BB,E1,C3,87,AF,E5,CD,1E
310 DATA BB,E1,C9,ED,5B,8A,2C,2E
320 DATA 00,06,21,C5,E5,D5,CD,C4
330 DATA BD,A7,20,04,3E,E0,18,0D
340 DATA CD,29,2C,21,E4,AE,85,6F
350 DATA 7C,CE,00,67,7E,CD,5A,BB
360 DATA D1,E1,2C,C1,10,DD,3E,0D
370 DATA CD,5A,BB,3E,0A,C3,5A,BB
380 DATA END
```

Phew! This guy just about rewrote the game. When you've typed in SAVEd and RUN that, with your games disc in the drive, it makes a file called CHEAT.COD or an error message. If you get an error message, it's time to persuade younger brother to read out the data while you check it.

If by some strange chance it worked, you only have to type in the next little program and you're almost there. Here's part 2. Again, don't have any other roms than the disc drive plugged in:

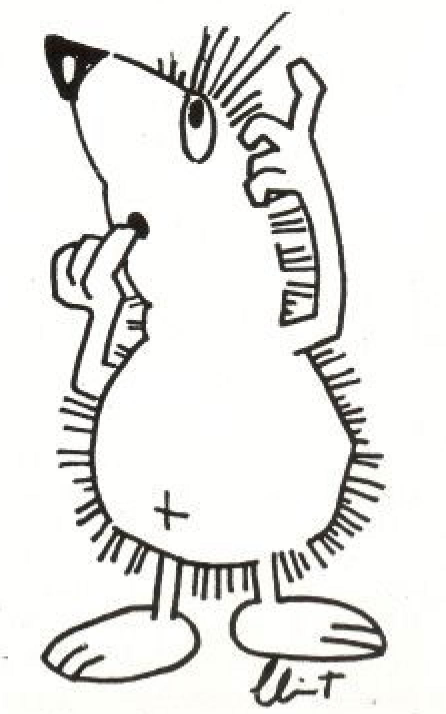
```
100 REM SPECIAL LOADER FOR ROLAND ON THE
    ROPES
110 MEMORY 4800
120 LOAD "CHEAT.COD",&AEE4:LOAD"ROLANDD"
130 LOAD "ROLANDC":CALL 29476
140 POKE &A7E5,&F8:POKE &A7E6,&AE 'Inf.
    Bullets
150 POKE &A80B,&F0:POKE &A80C,&AE 'Inf.
    Lives
160 POKE &32A4,&CD:POKE &32A5,&0:POKE &3
    2A6,&AF 'Map Feature
170 POKE &A259,1 'Or any number of monst
    ers.
180 CALL 41100
```

Save this on the game disc as ROLANDB and run it when you want the cheat version. Thanks to Mr. Olivier Landolt, all the way from Switzerland, for that one.

Now some really good stuff from a perfectly professional Polish poker: Justin Garvanovic. First in the stack is a poke for one of the cutest proggies ever to grace the ram chips of a 464, Spikey Harold.

This is the sort of poke that the British Society for the Prevention of Squashing Hedgehogs ought to have. Type in and save this lot on a blank tape or disc, and don't have roms on the back of your machine:

```
1 REM Spikey Harold pokes.
10 MEMORY 12345:BORDER 0:MODE 1
20 LOAD "!spiky1"
30 WINDOW #1,14,26,10,10:WINDOW #1,14,26
   ,13,13
40 tot=0
50 FOR n=&BE00 TO &BE3C
60 READ a$:a=VAL("&"+a$)
70 tot=tot+a:POKE n,a
80 NEXT n
90 IF tot<>6360 THEN PRINT "Error in DAT
   A.":END
100 CALL &BE00
110 DATA 2A,38,BD,22,3D,BE,21,EE
120 DATA 99,22,38,BD,3E,C3,21,1A
130 DATA BE,32,0E,BC,22,0F,BC,C3
140 DATA 00,83,2A,3D,BE,22,38,BD
150 DATA CD,37,BD,3E,F7,32,C1,7D
160 DATA 3E,C3,21,36,BE,32,30,00
170 DATA 22,31,00,C3,00,81,AF,32
180 DATA 33,9C,C3,F8,98
```



Typed it? Good. Now rewind and press Play. You still go through the great loading music, but afterwards Harold has a bit more spine to him. Have you seen any hedgehog flavour crisps lately?

Super ship for Thrust

Now, a poke from the same source for 'Thrust'. Loading instructions are much the same as the Spikey Harold pokes:

```
1 REM Thrust pokes
10 MEMORY &3FFF:BORDER 0:MODE 1
20 LOAD "!THRUST1"
30 WINDOW#1,14,26,10,10:WINDOW#2,14,26,1
   3,13
40 tot=0
50 FOR n=&9E00 TO &9E46
60 READ a$:a=VAL("&"+a$)
70 POKE n,a:tot=tot+a
80 NEXT n
90 IF tot<>6235 THEN PRINT"Whoops. Error
    in DATA.":END
100 CALL &9E00
110 DATA 2A,38,BD,22,00,9F,21,EE
120 DATA 99,22,38,BD,3E,C3,21,1A
130 DATA 9E,32,19,BD,22,1A,BD,C3
140 DATA 00,36,2A,00,9F,22,38,BD
150 DATA CD,37,BD,3E,F7,32,C1,3C
160 DATA 3E,C3,21,36,6E,32,30,00
170 DATA 22,31,00,CD,00,4F,C3,00
180 DATA 3C,3E,99,32,66,71,21,3E
190 DATA 04,22,3F,43,C3,00,70
```

As well as infinite lives, you also get quite a bit of fuel with this one – no free glasses with every 8 gallons though.

The next one (for Stainless Steel) is a bit shorter and isn't checksummed. That means you have to be careful when placing pinkies on the keyboard. Type in the following and either run with the tape rewound, or fast-forward file and then run.

```
1 REM Stainless Steel pokes.
10 MODE 1:MEMORY &3FFF
20 LOAD "steel",&4000
30 POKE &4084,&64
40 POKE &4085,0
50 FOR n=&64 TO &71
60 READ a$:POKE n,VAL("&"+a$)
70 NEXT n
80 DATA 21,00,18,3E,04,22,DE,06
90 DATA 32,78,14,C3,16,01
100 CALL &4000
```

That should iron out a few problems.

Finally we have Justin's last poke for this month – lives, fuel, ammo and air for

```
1 REM Pacific pokes
10 MODE 0
20 FOR n=0 TO 15:READ a:INK n,a:NEXT n
30 DATA 0,25,26,17,24,9,18,10,20,1,2,11,
   15,8,3,6
40 BORDER 0
50 MEMORY 12345
60 PRINT "Please Wait."
70 LOAD "!"
80 LOAD "!"
90 LOAD "!"
100 tot=0
110 FOR n=&BE00 TO &BE38
120 READ a$:a=VAL("&"+a$)
130 POKE n,a:tot=tot+a
140 NEXT n
150 IF tot<>3539 THEN PRINT "Whoops. Err
    or in DATA.":END
160 CALL &BE00
170 DATA 21,00,40,01,00,02,7E,EE
180 DATA EE,77,23,0B,78,B1,20,F6
190 DATA 3E,C9,32,0B,40,CD,00,40
200 DATA 3E,C3,21,26,BE,32,77,01
210 DATA 22,78,01,C3,5F,01,21,00
220 DATA 00,22,95,4F,7C,32,92,4F
230 DATA 32,0E,91,32,66,4C,C3,0B
240 DATA 9D
```

PSS/Ere's Pacific. Run this, rewind Pacific tape, and RUN.

Thanks for the pokes Justin, and may your stack never overflow its workspace.

Stop press

Vax – I've just had an envelope from Justin – with Pokes – Ed. Let's see what's inside: Infinite everythings for the one and only Starstrike II, a different sort of poke for Alligata's Meltdown and infinite lives for Gunfright. Here's what he has to say:

Starstrike II, unbelievably hot on the Amstrad, now has another routine which will give infinite shield, infinite fuel and stop laser temperature from rising. To use it either rewind the tape or skip the first file and then run the routine.

```
10 MODE 1:MEMORY &18FF
20 LOAD"!STARSTRIKE"
30 WINDOW#1,14,26,10,10
40 WINDOW#2,14,26,13,13
50 TOT=0
60 FOR N=&1D00 TO &1D2E
70 READ A$:A=VAL("&"+A$)
80 TOT=TOT+A:POKE N,A
90 NEXT N
100 IF TOT<>3818 THEN PRINT "ERROR IN DA
    TA":END
110 CALL &1D00
120 DATA 2A,38,BD,22,2F,1D,2A,01
130 DATA BB,22,38,BD,21,1F,1D,3E
140 DATA C3,32,30,00,22,31,00,3E
150 DATA F7,32,38,BC,C3,00,19,2A
160 DATA 2F,1D,22,38,BD,CD,37,BD
170 DATA AF,32,A0,24,C3,5F,01
```

Meltdown time

And the poke for tape-based Meltdown. What you have to do here is position the tape just before the saved game finishes and run the routine below.

It will then prompt you to load and save as normal with the new time put into the new file.

```
10 MODE 1
20 OPENOUT "D"
30 MEMORY &462
40 LOAD "gameposn.mdf",&463
50 POKE &638,&59
60 POKE &639,&23
70 SAVE "gameposn.mdf",b,&463,&1D7
```

Gunfright frights on

The final *(yep I'm sure this time - Ed)* poke from infinite lives for Gunfright.

```
10 MODE 1:MEMORY &3000
20 LOAD""
30 POKE &39E2,&C3
40 POKE &39E3,0
50 POKE &E9E4,&BE
60 B=0
70 FOR N=&BE00 TO &BE18
80 READ A$:A=VAL("&"+A$):POKE N,A:B=B+A
90 NEXT N
100 IF B<>2844 THE PRINT "ERROR IN DATA"
    :END
110 DATA 21,24,83,22,30,02,F3,F1
120 DATA C9,AF,32,E6,0E,C3,37,BD
130 DATA 21,FF,AB,11,40,00,C3,AF
140 DATA 39
160 CALL &BE10
```

Holding keys

Some people must play Galactic Plague, even if it's just while they're waiting for their Spindizzy tape. Jonathan Kups of Nuneaton (Look Mum! I got my name in the mag!) says that if you press E and R at the beginning of the game, you move on to the next screen. Has anyone out there got any more of these Keypress pokes?

Simple Starquake

Mark Lloyd of Co. Kildare has sent in the codes for Starquake. If you're interested they are:

1. VOREX, 2. AMBOR, 3. DULON, 4. ELIXQ, 5. TALIS, 6. INDOL, 7. ZODIG, 8. ASCIO, 9. UPQZZ, 10. SNODY, 11. KRYZL, 12. QUORE.

If you're not into Starquake, maybe you want his poke for infinite lives in Bounder. Just POKE 800,21 and run as normal, no need for even a line number. Don't start the game straightaway, wait for the credits to finish.

Matthew Pollard of Knutsford sent in the Bounder poke (I hope you lads haven't been pinching them from other magazines?), and also the following pokes for Radzone. No checksum on this one, so watch out for typing errors:

```
1 REM Infinite lives for Radzone
10 FOR f=&BB48 to &BB4D
20 READ a:POKE f,a:NEXT
30 DATA &21,&EE,&09,&36,&67,&C9
40 RUN"
```

Just type in this and run it with the fully rewound Radzone tape inserted in the relevant hole and the PLAY button down.

Profit at Doom

The other thingy sent in by Matthew is a poke for lives in Caves of Doom. Treat it much the same as the Radzone above, but all you troglodytes use the Caves of Doom tape and progyette instead:

```
1 REM 255 Lives on Caves of Doom
10 MEMORY 5240
20 LOAD"MCODE",5320
30 POKE &2525,255
40 CALL &5320
```

Another entry from Ireland. John the Hacker of Belfast has sent in infinite lives for Design Design's NEXOR game. Here's his hard work. Run this proggy, put in the fully re-wound NEXOR tape and Zap . . . Infinite lives. Would people please put checksums on long pokes huh?

Now for an apology: Sorry about the MAXAM re-assembly program in the September issue. Somewhere along the line the Great God Glitch put his hand in

```
10 '***************************
20 '*  NEXOR INFINITE LIVES   *
30 '*                         *
40 '*JOHN THE HACKER 26/07/86*
50 '***************************
60 for n=0 to 61
70 read a$
80 a=val("&"+a$)
90 poke n+&40,a
100 next
110 |tape 'Leave out this line if on a 4
    64
120 mode 1
130 print "Insert rewound NEXOR tape, th
    en hit any key.."
140 call &bb06
150 call &45
180 data 4E,45,58,4F,52,21,40,00,11
190 DATA 00,C0,06,05,CD,77,BC,21,00
200 DATA 01,CD,83,BC,CD,7A,BC,21,56
220 DATA 01,36,64,23,36,00,C3,00,01
230 DATA 21,25,2D,36,00,23,36,00,23
240 DATA 36,00,21,78,5C,36,3E,23,36
250 DATA 00,23,36,00,C3,00,20,00
```

and did a juggling act with the listing. Unfortunately, he dropped a few pieces in the process and in the end the finished article wasn't.

Judging from the number of phone calls we got, we thought we might put the correct listing in this month. Extremes of the apology go to the poor unfortunate who phoned up first and whom I greeted with all the warmth of a Jovian winter.

```
100 REM ** To turn a Maxam disassembly
110 REM ** into a form that assemblers
120 REM ** can make sense of again.
130 REM **
140 REM ** By the ever-unpopular
150 REM ** Hairy Hacker, 5/7/86
160 REM **
170 ZONE 9
180 OPENOUT "D":MEMORY HIMEM-1:CLOSEOUT
190 DIM l$(200)
200 INPUT "Name of file to convert ";f$
210 INPUT "Name of file for result ";c$
220 OPENIN f$
230 PRINT "Reading in File."
240 WHILE NOT EOF
250 LINE INPUT #9,a$
260 IF z=0 THEN bgn$=LEFT$(a$,4):z=1
270 xl=xl+1:PRINT"Line";xl;CHR$(13);
280 i=INSTR(a$,"&"):IF i=0 THEN 330
290 FOR j=1 TO 3
300 x$=MID$(a$,i+j,1):IF ((x$>"9") OR (x
    $<"0"))AND((x$>"F")OR(x$<"A")) THEN
    330
310 NEXT
320 l$(ln)=MID$(a$,i+1,4):ln=ln+1
330 WEND
340 nd$=LEFT$(a$,4)
350 CLOSEIN
360 FOR i=0 TO ln:IF (l$(i)>bgn$) AND (l
    $(i)<nd$) THEN l$(ln2)=l$(i):ln2=ln2
    +1
370 NEXT
380 'now make an output file
390 OPENOUT c$
400 OPENIN f$
410 WHILE NOT EOF
420 LINE INPUT#9,a$
430 b$=LEFT$(a$,4)
440 FOR i=0 TO ln2:IF b$=l$(i) THEN 460
450 NEXT:GOTO 470
460 PRINT#9,"L";b$;":";:PRINT "L";b$;":"
    ;
470 'now turn constants to labels
480 a$=MID$(a$,26):p=INSTR(a$,"&"):IF p=
    0 THEN 560
490 FOR j=1 TO 3
500 x$=MID$(a$,p+j,1):IF ((x$>"9") OR (x
    $<"0"))AND((x$>"F")OR(x$<"A")) THEN
    560
510 NEXT
520 b$=MID$(a$,p+1,p+3)
530 FOR i=0 TO ln2:IF b$=l$(i) THEN 550
540 NEXT:GOTO 560
550 MID$(a$,p,1)="L"
560 PRINT#9,CHR$(9);a$:PRINT,a$
570 WEND
580 CLOSEIN
590 CLOSEOUT
```

Amstrad PC program

Yeeeeah, another First! This here is a program for the Amstrad PC. So, keyboards at the ready for Vax's Keyclick proggy.

The PC has a real neat keyboard, but it doesn't go Clunk when pushed as per the real thing. All you've gotto do is type this lot into RPED (the CAPITALS are important), load into DEBUG, and save it out again.

Right, now you've read the manual on RPED, here's what you type in. Call the file CLICK.HEX:

```
:10010000EB22909C505152E460A880750EBA6100B9
:10011000B077EEB9C800E2FE0070EE5A59589DEAC9
:10012000000000000E1FBA5A01E82900080935CDB9
:10013000218BC3BB20012E890743432E8C07B8809AE
:10014000250E1FBA0301CD21B880031BA2401B10434
:10015000D3EA42CD21B409CD21C30D0A2D2D204B68
:100160006579626F61726420436C69636B205861D2
:10017000746368205620302E32202D2D0D0A240065
:0000000000
[Make sure there is a blank line here,
and don't type this line in.]
PIP newfile=oldfile[t8]
TYPE oldfile > newfile
```

[Make sure there is a blank line here, and don't type this line in.]

Sore fingers and squinting eyes yet? Get out of RPED, put in disc 1, type:

DEBUG

(now put in your disc with CLICK.HEX on it)

N CLICK.HEX

L

N CLICK.COM

W

Q

If you get any error messages, it's probably a good idea to check your HEX file over. Ditto if your version of the proggy goes Kerplonk.

All being well (a guy can dream, can't he?) you now have a file called CLICK.COM on your disc. Type CLICK and tap the shift key once or twice. You hear only the twang of a cheapo keyboard you say? Turn up the volume. Clever eh?

Don't expect this to work with Sidekick, however. This gets smart and puts in its own "read a key" routine for no apparent reason.

Now a tip for users of things like Amsword, Sidekick and Maxam. No injury intended but the tabs aren't handled properly. Smart editors like Protext, Real Wordstar, LocoScript and so on make text after a tab shoot along to a pre-determined place.

If someone gives you a document with real tabs in it the best way round this is to use PIP in CP/M – or DOS + on AIRO if you're feeling convoluted. Read up in your manual on this, but basically you use:

PIP newfile=oldfile[t8]

That incantation puts the right number of spaces in where tabs ought to be. In MS-DOS, you can say:

TYPE oldfile > newfile

But this doesn't let you change the tab spacings.

Finally, I shall answer the question on everybody's lips: Why do computer hacks always answer a question with another question? Well, why not?

ACU

In the Picture

Recent months have seen the advent of a new batch of graphics packages for Amstrad machines, each offering a variety of new features. Jill Lawson takes a look at Melbourne Draw, The OCP Art Studio and The Image System to evaluate their strengths and weaknesses.

Melbourne Draw from Melbourne House

Available for a while now, and based on GraphiQL which was originally written for the ill-fated Sinclair machine, this program comes with a combination of drop-down menus for the beginner, and one, two or three key-press commands for the more experienced user. This can be a little confusing in the early stages, but you'll probably soon evolve your own mixture of the two.

A rather wordy 32-page manual explains most functions fairly clearly and experience will show, for instance, when the more conveniently placed ENTER and COPY keys can be used instead of the spacebar on the CPC 464 and CPC 664 machines.

A colourful design gives way to a blank blue screen with yellow cursor in the centre when loading is completed. Enter brings up the menu bar across the top of the screen, from which you can select a variety of drop-down menus listing all the functions available.

To exit a wrongly chosen menu you must either select a function or press Escape. Cursor movement is controlled with the four arrow keys, and initially the program will cheep at you if you do something right and groan if you are wrong – happily, this facility can be dispensed with.

Colours can be changed from the range available on loading, but a note should be made of these since adjustments must be made before dumping screens to a printer.

Methods of drawing range from single pixel Plot, through Point Trail, Line and rubber-banded Line (where the key-press LI and RB commands are essential for speedy work) to (rubber-banded) Circles and Boxes, and the bonus ability to draw Ellipses at a chosen angle.

The Airbrush facility is limited to a single density and there is no paintbrush selection, although the manual details a method of constructing your own brush with the aid of Texture Trail and the Colour List. A unique Zap function enables the re-colouring or deletion of continuous lines but should be used with care.

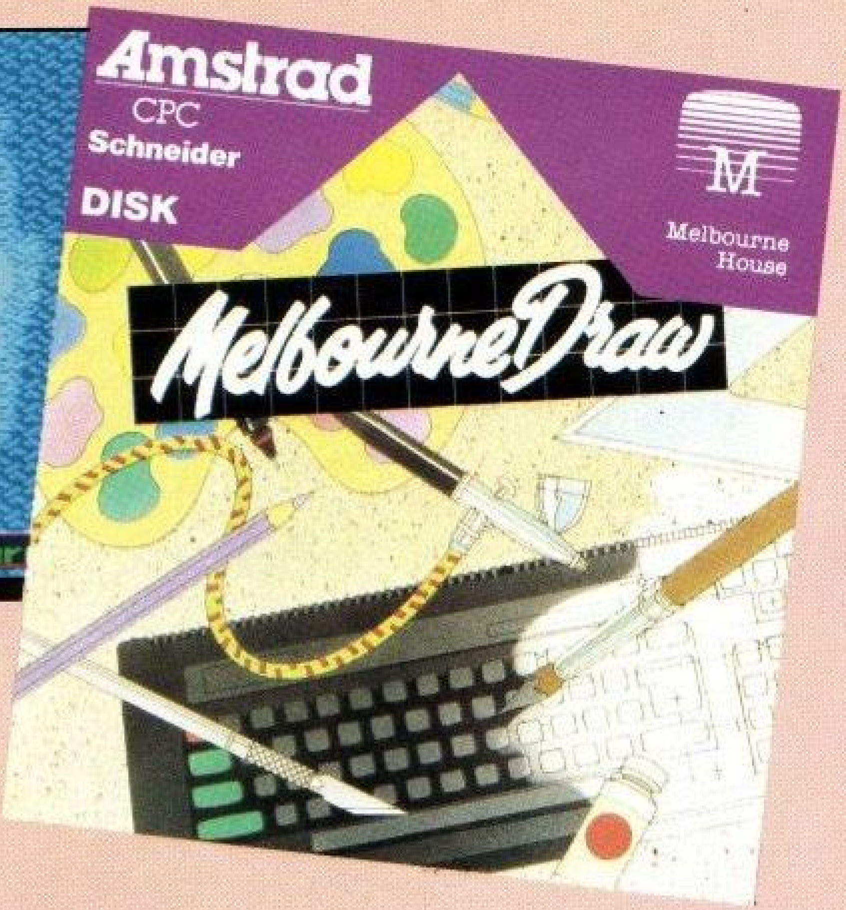
A slow but very safe Fill firstly floods any enclosed area with colour, at which stage any leakages can be spotted and repaired, and only then is the operation completed with the selection of Fill Colour or Fill Texture.

You will have noticed a couple of references to Texture, and this is where Melbourne Draw really scores. A sketch-pad can be called up to overlay the lower part of the screen, without damage to the main drawing. In this area you can design anything from patterns, which can be used to fill an enclosed area on the screen, to objects such as trees, birds, animals and people. After deleting the background colour from the Colour List, these can be Planted anywhere in your picture.

Collectively, drawings created on the pad and stored for use in your picture are known as Textures. These can be saved as a separate file for future use.

With Block Remember, rectangular areas can be lifted from the main drawing and subsequently converted into textures, or Copied, Moved or Mirrored at will, and colours can be Swapped or





Merged in a chosen area. Text can be added to drawings, but there is only one size and style available, unless you design your own.

If you wish, a Crib bar will detail current coordinates, colour and command and whether XOR is being used. The default cross-hair cursor can be changed to a useful arrow shape or removed from the final picture altogether.

Unfortunately the cursor colour remains constant and may need to be changed, for instance to a dark colour when working over a light area.

There is a very small (7-pixel square) Magnify option, suitable only for the occasional accurate positioning of a single pixel, or to check for gaps in a line rather than as a regular drawing aid. I found that Moving the magnify box can produce alarming unwanted lines across the screen. Also, the 'magnify' cursor occasionally reproduces itself in technicolour at random positions on the picture, necessitating a certain amount of re-drawing.

I would suggest that you avoid using the sketch-pad and magnify together whenever possible. And try to avoid running the cursor off the lower right-hand corner of the screen since in some instances it can return with cannibalistic tendencies.

There is no straightforward way for tape users to save their pictures to, or load them from disc (or vice versa) make sure you buy the appropriate version.

A Basload program which comes with Melbourne Draw enables you to use pictures in your own programs, and three Shaded Dump programs permit dumping to Epson/Amstrad printers.

On the whole this is a fairly sophisticated drawing tool with some very attractive features. I found it a bit heavy going at first but once you are familiar with all the functions available (and the couple of things to avoid) it provides a wealth of possibilities for the imaginative artist. As the only one of these utilities to operate on the full CPC range and in all three screen modes, it must be a recommended buy for anyone looking for a good, general-purpose package.

The OCP Art Studio from Rainbird

Having tried out this utility on the Spectrum, I couldn't wait to get my hands on the updated Amstrad version. The good news is that this is now completed but, and here's the sad part – at present only for the CPC 6128. I was able to borrow a machine for just long enough to get taste of what it offers – and what I saw, I liked.

Formulated on the WIMP concept, almost all the information needed to use the program appears on screen in a series of drop-down menus and sub-menus.

Operation can be with joystick or mouse, but performance from the keyboard is so smooth that these are only a real benefit with the Spray Can option.

It is intended to enable the absolute beginner to start drawing immediately, but I expect it will come with a comprehensive manual too, similar to that supplied with my Speccy Studio.

At the outset you are presented with a white screen, black arrow cursor (moved with the cursor keys) and a double row of blue boxes with various menu titles from which you can pull down lists of functions.

In some cases, making a particular choice will lead to a further list or box. When a choice has been made the cursor may change to an appropriate icon indicating the nature of the current mode, but an option exists to use a cross-hair cursor as a permanent alternative.

Drawing on screen can be achieved with Pen, Brush or Spray Can. Sixteen variously shaped Pens and eight Spray patterns are built into the program, along with sixteen brushes, the shapes of which can be re-designed to your own requirements.

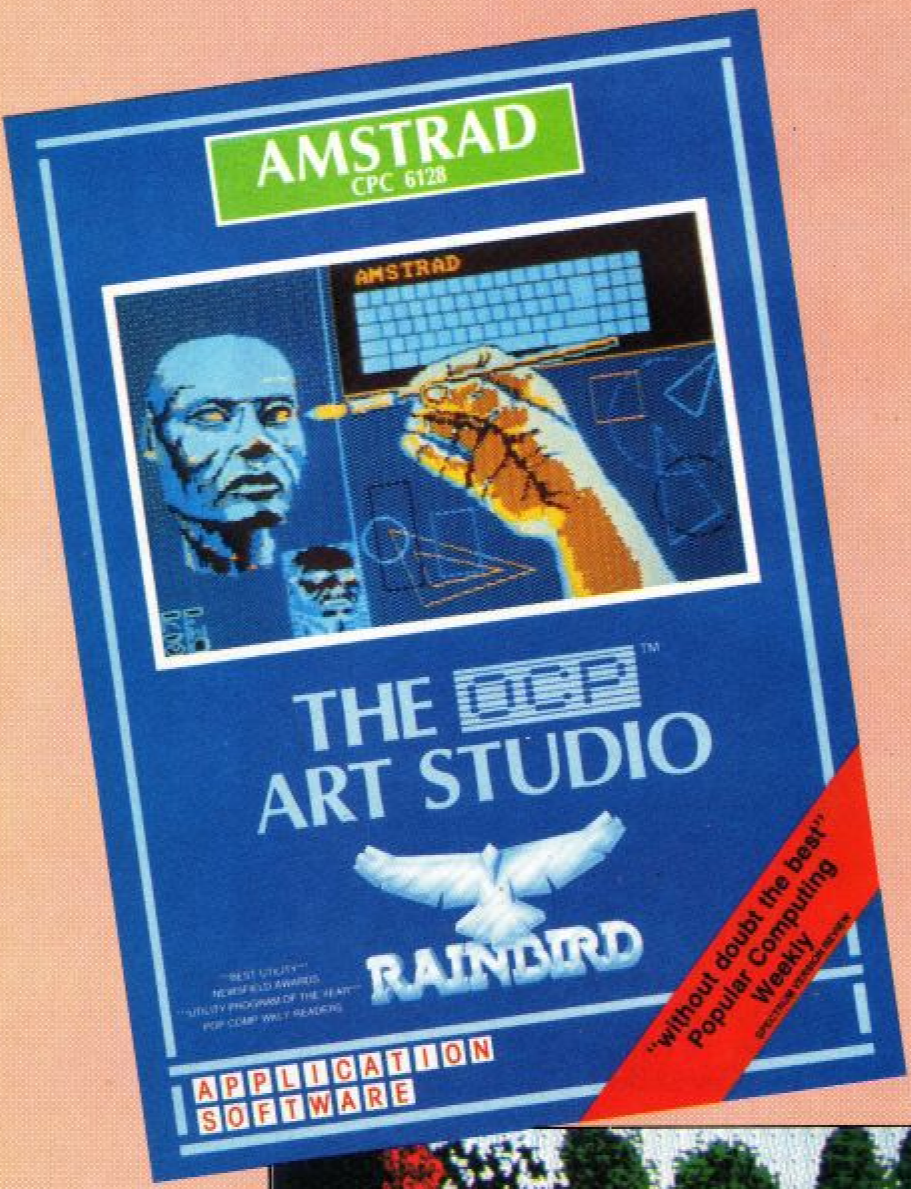
Filling is fast and efficient, with the option to use either solid colour or one of 32 Textures, any or all of which can be edited for your needs. Textures can be Washed onto an area drawn previously to create dotted lines, fancy printing and so on.

Points, Lines, continuous Lines, Rectangles and Circles, with rubber-banding if desired, are included in the Shapes menu along with Triangles and Rays but, surprisingly, no Ellipses. However, these can be produced by defining a window round a circle and stretching it with the Re-Scale facility.

A Window can be defined to include an area up to full screen size, and once specified that area within the window can be Copied, Moved, Rotated, Mirrored, or Enlarged, Reduced, Squashed and Stretched with the re-scale option.

AND, OR and XOR modes may be utilised with windows and the contents may be printed without the background or other chosen inks.

Text can be added in a multiplicity of directions, sizes and styles and can be





edited to produce new fonts which can be saved separately. A selection of alternative fonts is included on the disc.

The full screen is utilised for each of the excellent x2, x4 and x8 Magnify modes and each level has Scroll bars to enable work over a large area.

Even with the best programs it is possible to make mistakes, or you may just not like a particular addition to your picture. Provided that you take an immediate decision, the last operation can be aborted with the invaluable Undo.

There is a very elegant File load/save and Disc Catalog facility and comprehensive options for dumping to a range of printers.

Well documented, smooth and efficient in operation and embracing all the features that you would expect to find in a contemporary drawing program, it is difficult to find anything to dislike about Art Studio. Apart from the fact that it operates only in Modes 1 and 2, it may well provide sufficient reason for CPC 464 and 664 owners to consider upgrading to a 6128.

The Image System from C.R.L.

At first sight this one seems a bit of an oddity – a new art package offering relatively few of the facilities of other programs. Drawing aids are confined to Plot, Line, Rectangle and an unusual Circle/Ellipse-producing method whereby the figure is drawn inside a chosen square or rectangle.

There is a fairly speedy and efficient Fill but if there is a leakage it can only be stopped, not aborted, so it needs to be used with great care.

It is possible to re-design Textures, for which purpose you must leave a 16 x 32 pixel area free in the top left-hand corner of the screen. However, these have the limitation that they may only be used to fill areas of a colour different to any of those used in the texture.

Add to this the fact that there is no facility for the addition of text and only Mode 0 is available and you could write this one off. Persist though, and you'll discover that while it may not be the world's greatest drawing program, it has enough interesting and ambitious features to keep you occupied for many a happy hour. And there are possibilities for producing some very effective screen displays.

If you can ignore a certain amount of confusion between the Tab and Escape keys, the manual explains clearly what can be done with the Image System. A step-by-step exercise introduces many of the commands available and how they can be used to create special effects.

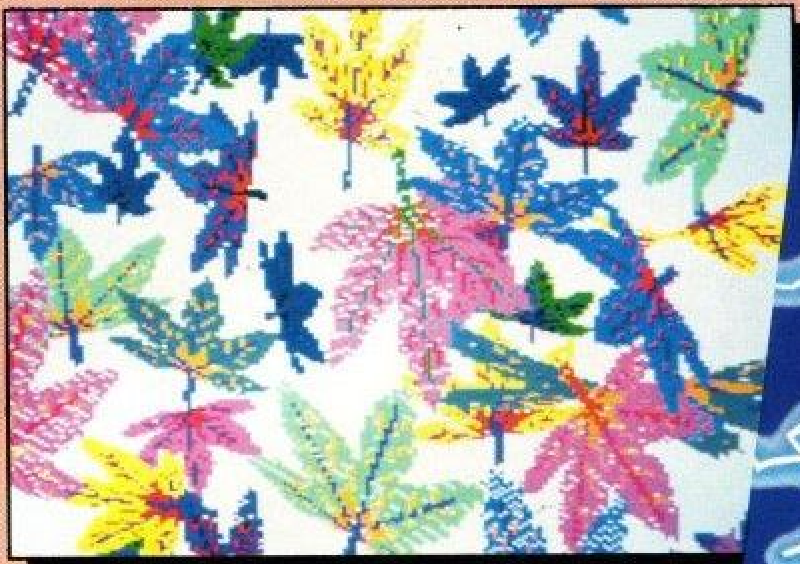
The principle on which the program is based is the saving of defined areas of the screen as separate pictures, which can subsequently be recalled, re-coloured and manipulated in a variety of ways.

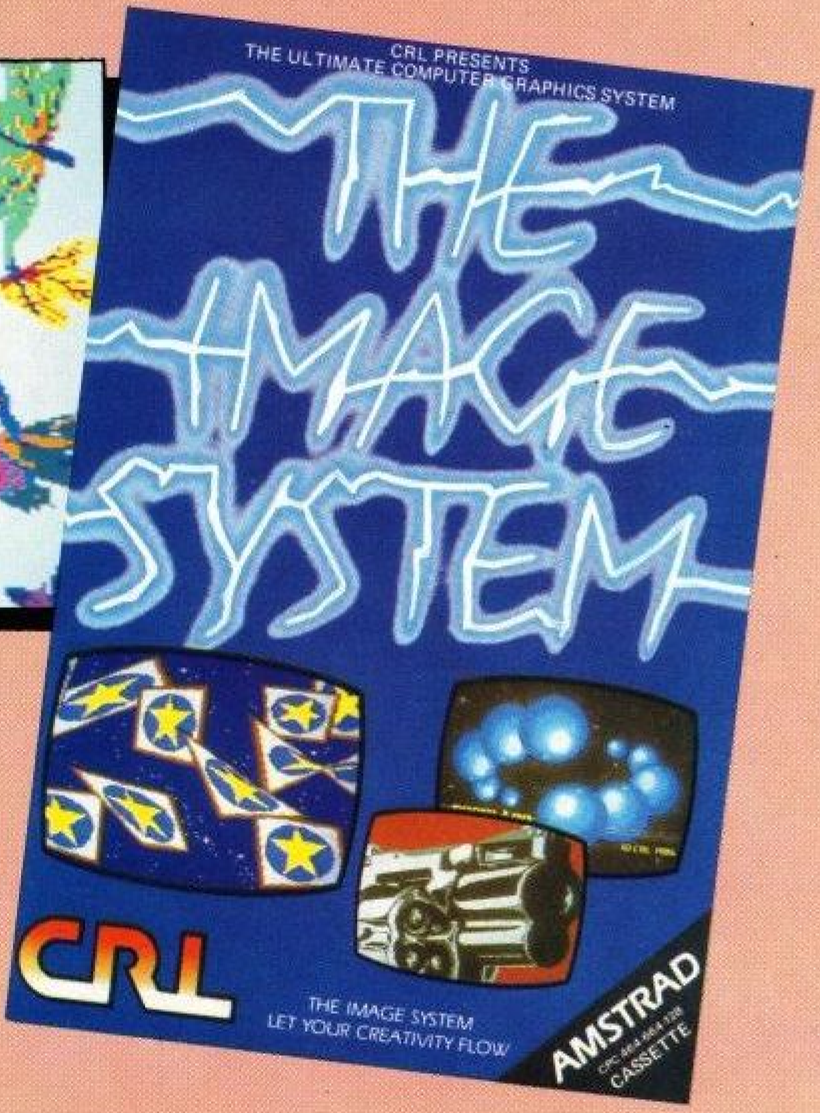
Suppose that you draw a leaf in four colours and save it as Picture 1. You can then clear the screen, change all four colours to blue and print it on the screen as a blue silhouette of the original. Changing the colours back to those in the first drawing and making the background transparent, you can put the leaf back on the screen, offset slightly from the blue shape to give the effect of a shadow behind it.

Alternatively, your picture can be Moved, Rotated, Reduced, Enlarged, Stretched or Compressed in either direction, or even Twisted before being placed on the screen. And, since your one original drawing can be used an unlimited number of times in a variety of shapes and colours, you can quickly fill the screen.

When a picture is altered in shape or size, several pixel-size holes can appear in the resulting image, and depending on the style of design it may be necessary to do some repair work to produce a satisfactory result.

Up to 255 pictures of at least 2 x 2 pixels may be stored in the memory – an indicator bar shows how much has been used. As the available memory dwindles, some or all of the previously saved





pictures may be Erased.

However, since the program crashed on several occasions after erasing pictures, I found a safer method was to save the screen, reload the Image System then reload the screen thereby freeing all the memory for further use. This is tedious, but better than losing several hours work.

Pictures stored in memory may also be saved as a separate file. These can be re-loaded and used to add previously drawn elements to a new picture, creating startling or amusing effects. I did find it necessary to make a separate note of picture details I had saved, and the colours in which they were drawn.

A note book is handy for listing file names, since there is no built-in catalog option and attempts to load an incorrectly named screen or picture file can return you to Basic.

A menu bar at the foot of the screen gives details of the colour palette available, in which any of the 27 Mode 0 colours can be substituted for an existing colour. An arrow points to the current drawing colour, selected with 1-8 and SHIFT/1-8.

A lower colour band shows the colour currently chosen for parts of a picture originally drawn in the colour immediately above it, and shows a 'T' on those colours chosen to be transparent when placing a picture on the screen. A message area gives information regarding current commands in use, and displays the X and Y coordinates of the cursor.

A useful optional zoom window at the right-hand end of the menu bar enables accurate plotting and facilitates texture design. The whole bar may be moved to the top of the screen or removed altogether.

The manual also has some interesting ideas regarding drawing techniques and the use of finished pictures as a basis for photography. Other suggested applications are for needlework (this is a uni-sex program), screen-printing, using pictures in your own programs and use of the printer dump routine.

The program does lack much of the sophistication of the previous utilities if you are looking for a straightforward drawing tool, and I would certainly advise care with the Fill and Erase Picture commands. But I found it very easy to use and it could provide a lot of fun for the less serious user who wants to create colourful designs quickly. It has an addictive quality which I find hard to resist.

The verdict . . .

If you own a CPC 6128, the OCP Art Studio has everything you need for fast, problem-free production of detailed hi-res pictures. And if you can cope with Lenslok and don't mind foregoing the possibility of drawing in Mode 0, this is certainly the best value art utility available to date.

As an all-mode, all-CPC machine drawing program, Melbourne Draw has the across-the-board versatility that the others lack and incorporates several very pleasing features – a sound purchase for the average Amstrad user who is looking for maximum flexibility.

A little on the pricey side, The Image System is out of the running as a basic drawing tool. But for the production of colourful, complex low-res screen designs from a minimum of initial work, given its ability to manipulate areas of screen, this is the fun one for those with perhaps more imagination than artistic ability.

	Melbourne Draw (3 Modes)	OCP Art Studio (Modes 1 & 2)	The Image System (Mode 0)
General ease of use	8	10	9
Speed	8	10	7
Drawing facilities	9	10	8
Special features	9	9	10
Freedom from problems	8	10	7
Fun factor	8	7	10
Value for money	8	9	7
Overall assessment	9	10	8

256K SILICON DISC



This is the fastest storage system available for Amstrad CPC computers and is compatible with CPM 2.2, CPM+ and all DK'Tronics peripherals including the 64K/256K memory expansions. When used with CPM+ and our 256K memory the edition disc capacity is a massive 442K (more than the PCW 8512 Ram Disc). It automatically logs on as drive B or drive C in two drive systems and does not require extra power supply.

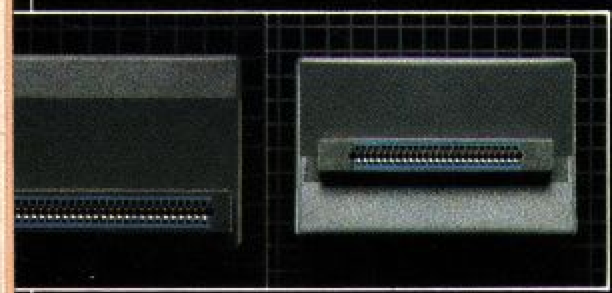
The 256K Silicon Disc is designed to be used with at least one normal disc drive attached. When fitted the directory uses 2K thus leaving 254K for storage, over 70K more than the normal discs.

Data and programs can be exchanged between the Silicon Disc and a normal disc, application programs can then work on the data at vastly increased speed especially on systems with only one normal drive.

Software is contained in an expansion ROM and there are two environments in which the Silicon Disc can be used, BASIC under AMSDOS where all the normal AMSDOS commands are fully supported LOAD, SAVE, MERGE, CAT etc and within CP/M 2.2 CP/M+ where commercial programs are designed to run on multi drive systems.

£99.95 including VAT (464 and 6128)

64K and 256K MEMORY EXPANSIONS



The memory expansions increase the Amstrad 464's internal memory to give a total of 128K or 320K. The 621's memory is increased to 320K. It is compatible with all DK'Tronics peripherals including the 256K Silicon Disc.

It is supplied with bank switching RSX software (464 software on cassette 6128 on disc.

The software adds some BASIC commands which makes it possible to use the second 64K (or 3rd or 4th and 5th in the case of 256K) for storage of screens, windows, graphics and basic arrays. This ability means that you can write much larger basic programs and sophisticated programs that use pull-down menus with ease.

With an expansion fitted on the 464 it then has the same memory configuration as the CPC 6128. It will then run CPM+ with its massive 61K T.P.A. area, opening up an even larger software base to 464 users. When using either of the expansions with CPM 2.2 on the 464 and 6128 computer the T.P.A. is increased to 61K.

The RAM is accessed by means of bank switching using a single I/O port. Memory is actually switched in and out of the 64KZ80 address space in 16K sub blocks (as are the ROMS). The port determines which particular combinations of the original four 16K sub blocks and any new sub blocks from the expansion RAM will occupy the 64K address space at any time. All of this switching is done automatically by the software supplied.

The contents of the expansion RAM are retained if the computer is reset and if the RAM is used for machine code the contents will remain even if the computer crashes.

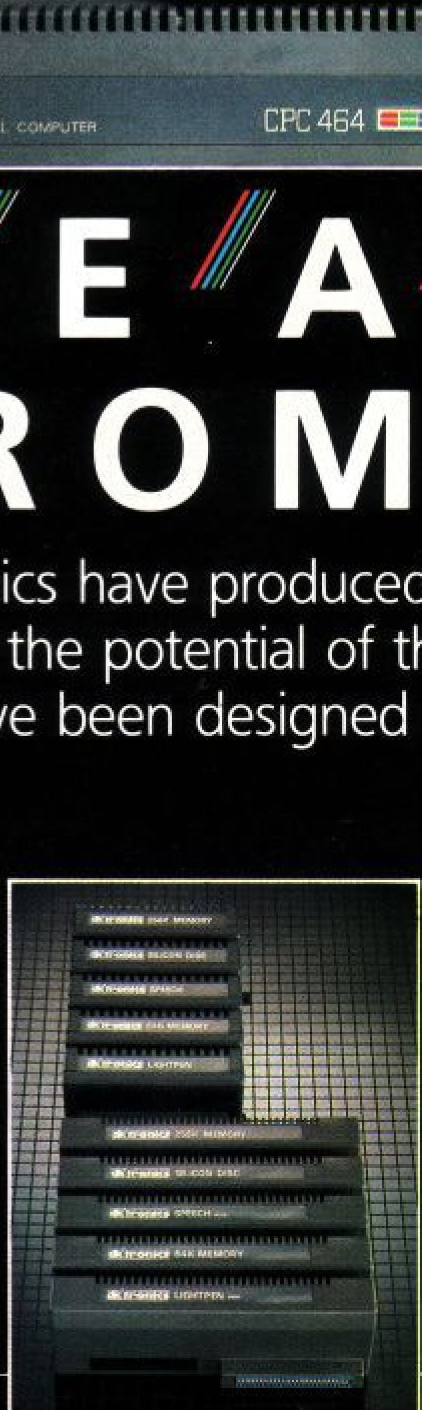
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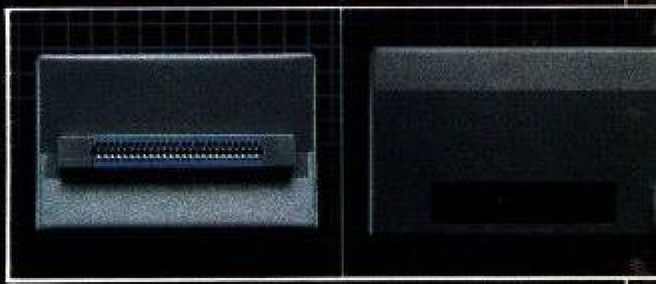




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The voicing of the words is completely user transparent and the computer can carry on its normal running of a program whilst the chip is talking. The speech output from the SPO/256 is mono and directed to both speakers.

There is a cassette version for the 464 and a ROM version for both the 464 and 6128.

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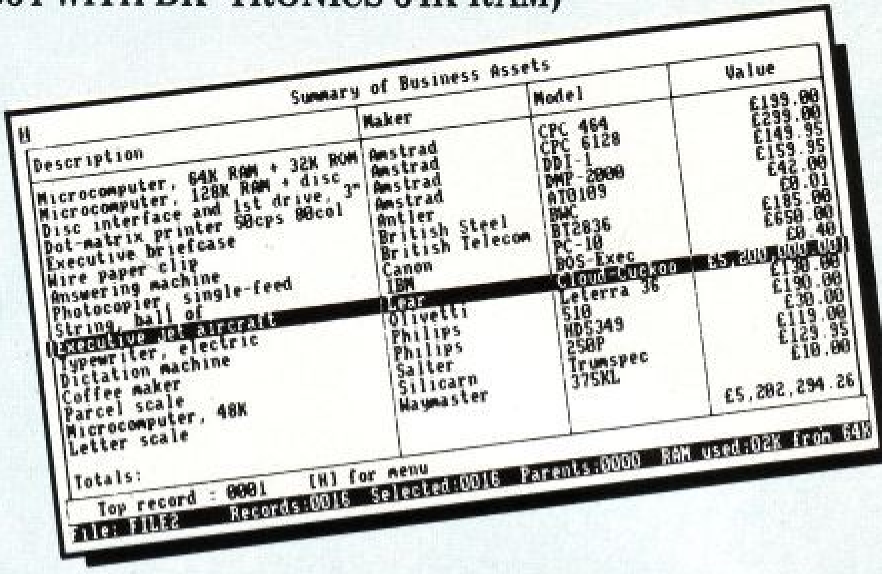
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MASTERFILE III

FOR THE AMSTRAD CPC 6128 (ALSO CPC 464/664 WITH DK 'TRONICS 64K RAM)

RATHER ENHANCED ...

We are pleased to announce the third major issue of MASTERFILE. This is no mere update, but a thoroughly enhanced and streamlined re-design of MASTERFILE 128, packed with new features, and a delight to use. We included some of the best ideas which our earlier MASTERFILE customers contributed. We sent prototypes out to our eager "test" users, and they kicked it as hard as they could, and came up with even more ideas. We spent several weeks further honing MASTERFILE III. Then we sat down and totally rewrote the manual.



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Three Times faster disc load/save than MASTERFILE 128/II. **Twice** the screen speed. Total +/— values. Merge all/selected. Save all/selected. Disc file erase options. Implicit record numbering, both physical and selected. GOTO selected record number. Simpler but more powerful search. Full data name prompting. Print report width up to 160 columns. Page numbering. Insert records anywhere. **Record Cursor** for direct update within a display page. Smart new text editor. Format printing. Extended **User Basic** options. Compatible with all earlier CPC MASTERFILE files. **Field-to-Field Calculations.**

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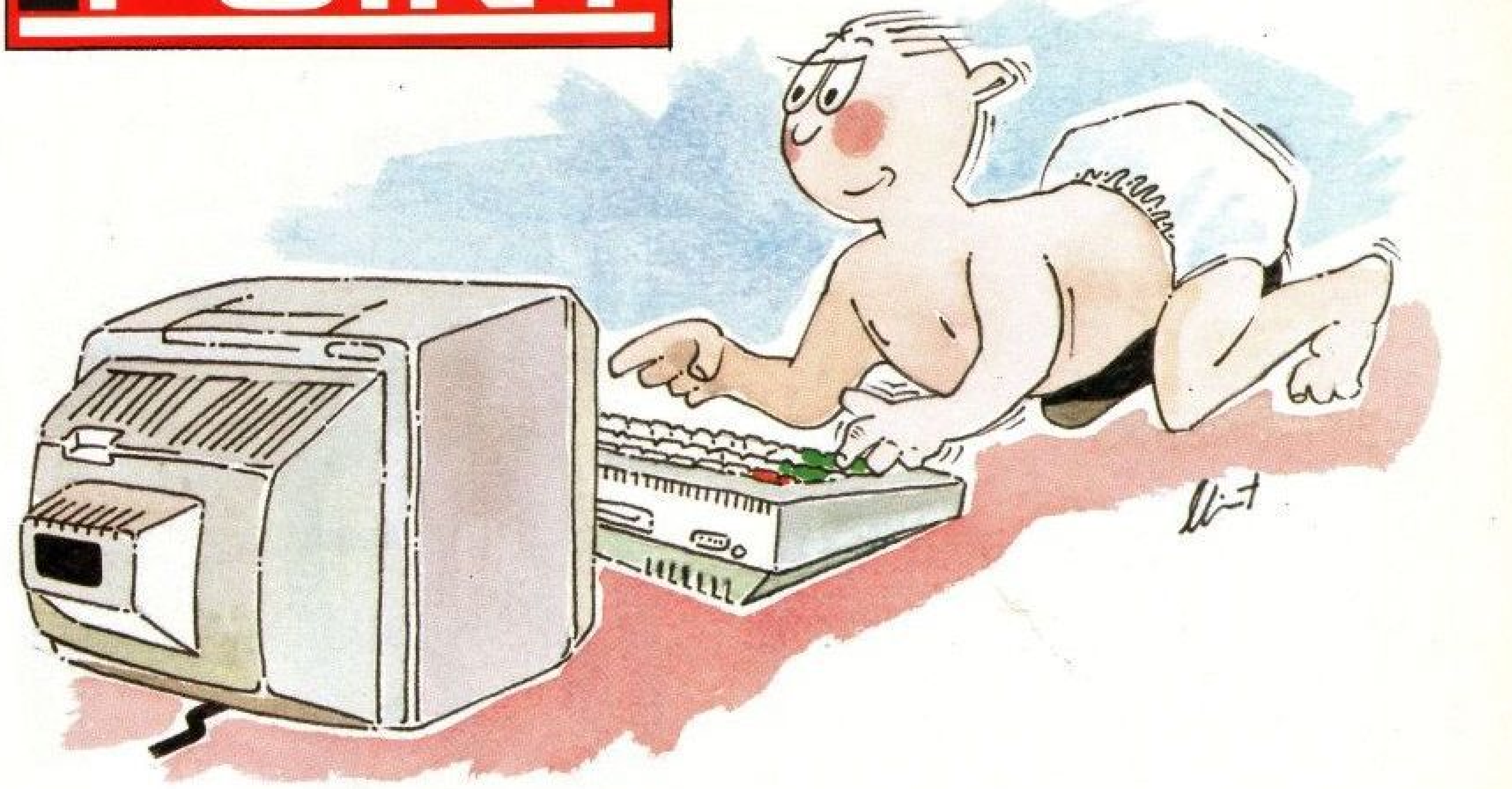
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Machine code? It's child's play!

There's a nasty rumour going around that assembly language is difficult. Peter Green aims to dispel it with a new series for the Basic programmer who wants to become bilingual.

The aim of this series is to turn common or garden Basic programmers into machine coders – and it's easier than you think.

Machine code may have been an esoteric black art back when programmers entered hex codes into their computers with switches, but the sophisticated assemblers and debugging monitors now available for the simplest home computer make it a field anyone can learn.

Amstrad owners are particularly fortunate. First, the CPC range has one of the widest choices of assemblers, most of which are excellent, including Arnor's Maxam, Gremlin Graphics' Pyradev, Hewson's Zapp, Discovery's Code Machine, Ocean's Laser Genius and Hisoft's Devpac.

Second, for every Basic operation which involves the computer hardware – getting a keypress, printing a character on the screen, setting up windows, using the sound and graphics or reading and writing to cassette or disc – there is an equivalent machine code routine available for the machine coder. So the beginner already has a thoroughly debugged framework of subroutines to work with.

During this series I'll explain how to use some of the most important firmware routines, but for really serious work the CPC Firmware Specification (SOFT 968, available from Amsoft) is a vital book. It costs £19.95, so start saving those pennies!

Routine problems

Having said that, I must point out that the reason why many people find machine code difficult is not that it is so hard but that it is so simple.

Many quite elementary operations in Basic – such as printing a string of characters or adding 132,977 to 76,281 – do not exist in machine code. If you want to do this sort of thing then you have to write a piece of program to make it happen. Machine code is primitive.

Not only that, but mistakes are generally fatal. Basic programmers are using a complex, high level language, a lot of which is there to check that you aren't doing something silly. Try to RETURN when you haven't first GOSUBed and Basic says "Unexpected RETURN", and goes back to command mode so you can fix the mistake in your program.

The machine code programmer, however, is working without a safety net. Make the same mistake here and the poor dumb microprocessor will happily fetch a non-existent return address – which will generally be a random number – and jump there, 999 times out of 1000 disappearing up its own output port in the process.

If this random jump doesn't cause a complete reset, losing your program irrevocably, it will probably end up in some kind of infinite loop. Pressing Esc is no help – the loop is very unlikely to be doing anything sensible like checking the keyboard. So to regain control you'll have to switch off the computer – losing your program irrevocably. Hence the most fundamental law of machine code is:

Never run your program unless you've saved it first

If the worst happens – and it will, frequently – your program is safe on tape or disc and can be reloaded for correction. I'm sure hardened Basic programmers will find this a difficult habit to get into, but don't worry, it will come. Having four hours of hard work completely wiped out

is an excellent learning experience.

The complete lack of error trapping in machine code, plus the sheer speed at which things happen, makes debugging a program harder than in Basic. Nevertheless, there are useful techniques you can adopt which I'll cover later in the series.

It's the same, only different

At one level, that of syntax, Basic programmers should have little trouble making the changeover to assembly code. Basic commands consist of keywords such as PRINT, GOSUB, PAPER, INK and RETURN followed, if necessary, by operands like PRINT "Hello", GOSUB 200, PAPER p%, INK 1,26 and RETURN.

The operands are constants, variables or sometimes other Basic keyword constructions such as PRINT CHR$(c%). Variables can be of several types, such as string or numeric, and are identified by name like *message$* and *A%*.

Assembly language works much the same way. The commands are called operation codes, shortened to opcodes.

Strictly speaking, assembly language doesn't deal with opcodes, the actual eight-bit binary numbers that the microprocessor interprets as its instructions. Instead it uses English mnemonics to represent the opcodes, which makes it easier for the programmer to remember. For instance opcode &C9 or mnemonic RET means return from subroutine. This distinction is rather pedantic for our purposes.

What about variables? Purists will probably cringe, but it may help Basic programmers to think of machine code as having "variables" of two types – the processor's on-chip registers (identified in assembler by letters) being one type, and the bytes that make up the computer's memory (identified by their address, 0 to 65535, or &FFFF in hexadecimal), being another.

So we have following analogy:

Basic: *Keywords operate on variables* **LET A=B**

Machine Code: *Op codes operate on registers/memory* **LD A,B**

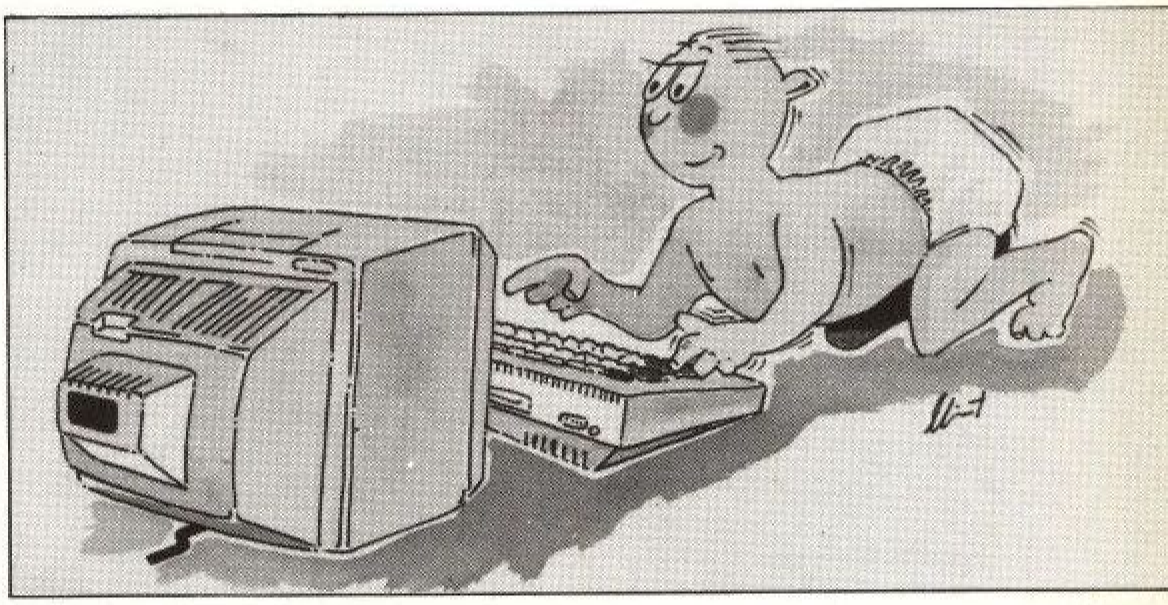
The syntax is very similar, although the mnemonics are more terse than keywords (the example means LoaD the A register with the B register). Nevertheless, most are fairly obvious and you should have no trouble picking them up.

However there is one important difference between Basic and assembler. In Basic, A=A+B or D=C+E works just as well as aardvaak=aardvaak+baboon or dolphin=coypu+egret, if you fancy zoological variable names. Keywords will work on any variables (of the right type). Basic doesn't care.

Machine code does. Certain operations will only work on certain registers. ADD A,B is fine, making A equal to A plus B. But there's no way to add the C register to the D register and store the result in the B register in one go. For single-register addition, the processor insists that one of the registers involved must be A, and the answer must be left in A. That's the way the chip is built. To do D=C+E, we need to do some shifting about:

```
LD A,C ;put C into A
ADD A,E ;add E to it, leaving answer in A
LD D,A ;move answer from A to D
```

Notice that A's original contents have been lost (A is now C+E too), so if they were important you would have to save them before doing this operation and restore them afterwards. This shifting about of data is one of the main characteristics of machine code that the Basic programmer must get used to.



Registering the details

Let's look at what registers are available on the Z80, the microprocessor at the heart of the Amstrad computers. First and most important is A, the accumulator.

As we have seen, for eight bit arithmetic (addition and subtraction only, I'm afraid – no multiplication or division) it must form one of the operands, and holds the result afterwards. A series of additions accumulates a running total in A, hence its name.

Comparison instructions are available for testing the value of a byte in A, and A is also required for any of the logical operations (AND, OR, XOR or NOT, which work the same as in Basic).

A can be incremented and decremented, and have its contents directly transferred to and from any specified byte in memory. Its contents can be shifted and rotated left and right in various ways. In short, it is the most used of the available registers and is the real workhorse of any program.

Closely associated with the A register is the flag or F register. This is eight bits wide too, but the bits represent states or conditions rather than a number. For example, the least significant bit in F is called the "carry" flag. If an addition causes a carry, this bit is set to 1, otherwise it is reset.

The carry also functions as a "borrow" when subtracting, and as a temporary store for bits being shifted. Bit 6 of F is the "zero" flag, set if an operation results in a value of zero, and reset otherwise.

Other important flags are "sign" and "parity/overflow". Op codes exist for testing these flags: the machine code equivalent of IF...THEN.

There are a further six eight bit registers, called general purpose registers and labelled B,C,D,E,H and L. These are less versatile than A, as we have seen, and are used mostly for temporary storage of values.

Being located on-chip, interchange of data between each other and A is very fast and efficient. They can all be directly incremented and decremented, making them useful as loop counters, and the shift and rotate instructions also apply.

Furthermore, the registers can also be used in pairs to represent 16 bit values. The three pairings are BC, DE and HL. This allows 16 bit arithmetic to be performed (here HL plays the role of the 16 bit accumulator), but there are no op codes for 16 bit comparisons or logical operations.

One of the more important uses of the register pairs is as "pointers", which means the 16 bit value in a pair is used not as data, but as a pointer to the address of a memory byte that is to be used as data. This is good for indexing the entries in a table stored in memory.

Two more 16 bit registers are available,

the index registers IX and IY. These cannot be split into two eight bit halves (not legitimately, at any rate), are less versatile than the general purpose registers, and as their name suggests are most often used as pointers or indexes to data in memory.

In this respect they have an additional feature, in that they take an additional fixed offset. For example, LD A,(HL) puts the byte pointed to by HL into A. So does LD A,(IX), but LD A,(IX+5) adds 5 to the contents of IX and gets that byte instead. This feature could be used to add up the fifth entries from a group of tables.

The Z80 contains an "alternate register set" called A', F', B', C', D', E', H' and L' which can be swapped with the normal set at will and thus almost double the on-chip storage capacity. However in most home computers these registers store values used by the operating system. The Amstrad is no exception, so we cannot use the alternate set without taking special precautions.

Your assignment is . . .

Assigning a value to a register or memory byte is one of the most fundamental operations. In Basic it is often done implicitly, as in Mode 2, where the screen mode is a variable (0-2) and is being assigned the required value. The machine code equivalent is:

LD A,2: put required mode in A
CALL &BC0E: this is a firmware subroutine that changes the screen mode.

The result on-screen is identical. We put the 2 in A because that is where the subroutine expects to find it, although how it changes the mode isn't really of interest to us.

In Basic the command to assign a value to a variable is LET (we could have said LET m=2:MODE m but it's a bit long-winded). Basic programmers almost always leave out the LET, which is optional. The assembler equivalent is LD (LoaD) and is not optional.

Let's finish this article with a useful example. I've mentioned that machine code has no PRINT command. Let's write one as a subroutine we can incorporate into future programs.

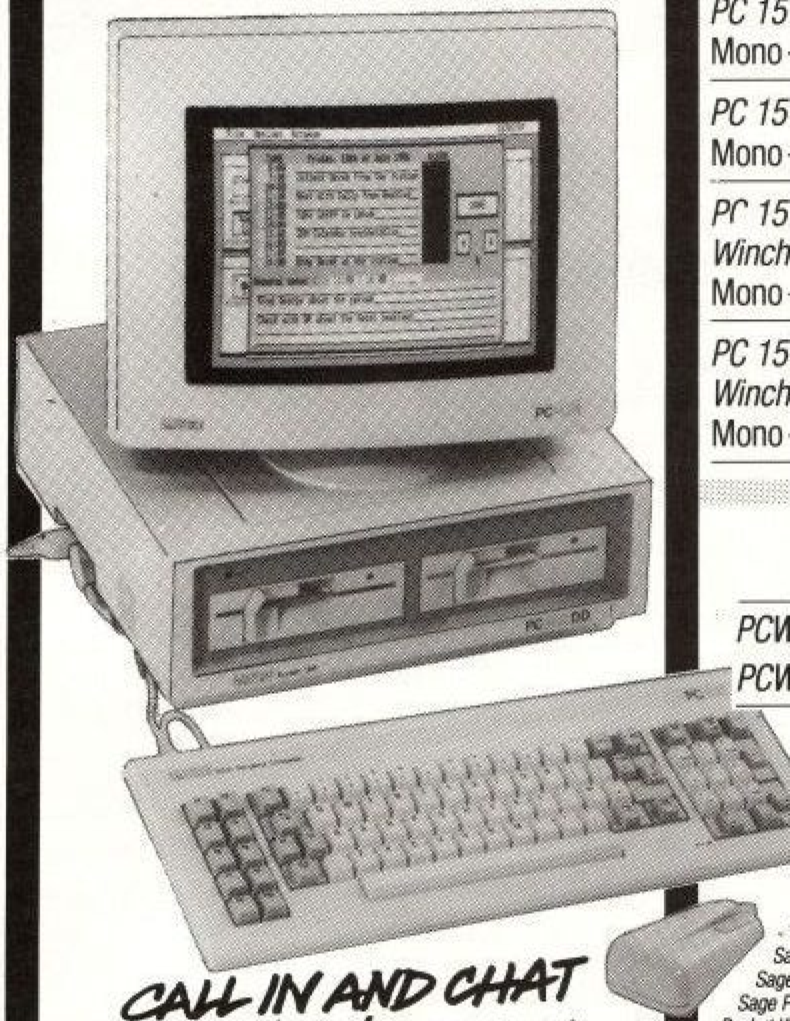
The Basic program is PRINT "Hello". Basic knows that this means start at the "H", and move along the string sending characters to the screen until there are no more left, that is loop five times. We have to duplicate this in machine code. Here's how:

LD HL,string: The assembler works out the actual address of the label 'string' as a 16 bit number
LD B,5: We know the string is five characters long
CALL print: This is a subroutine that prints B characters starting from address in HL
RET: Go back to wherever we called this routine from
LD A,(HL): Get a character from the address pointed to by HL
CALL &BB5A Call the firmware subroutine to print a character on screen
INC HL: Increment (add one to) HL to point to next character
DEC B Decrement B, the loop counter
JR NZ,print: IF B did not reach zero, THEN there are more characters to print. Go do it.
RET: ELSE B is zero, so we've printed five characters and finished. Return to where we called this subroutine.
TEXT "Hello": the message to be printed

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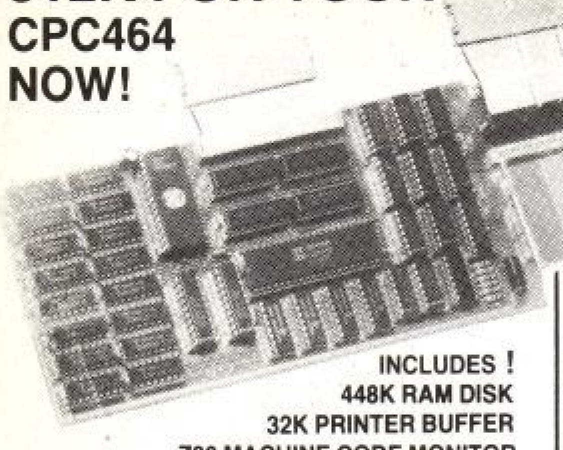
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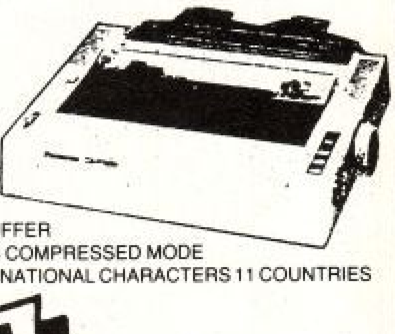
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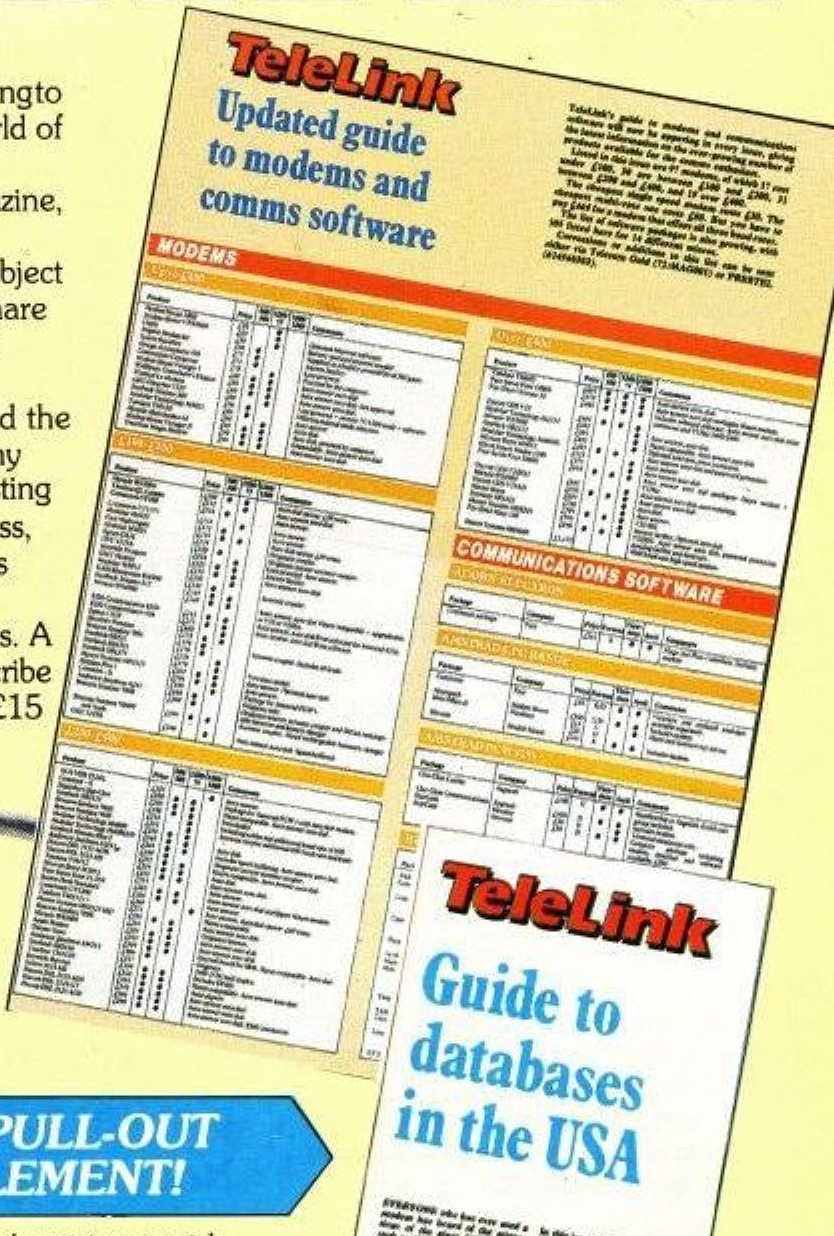
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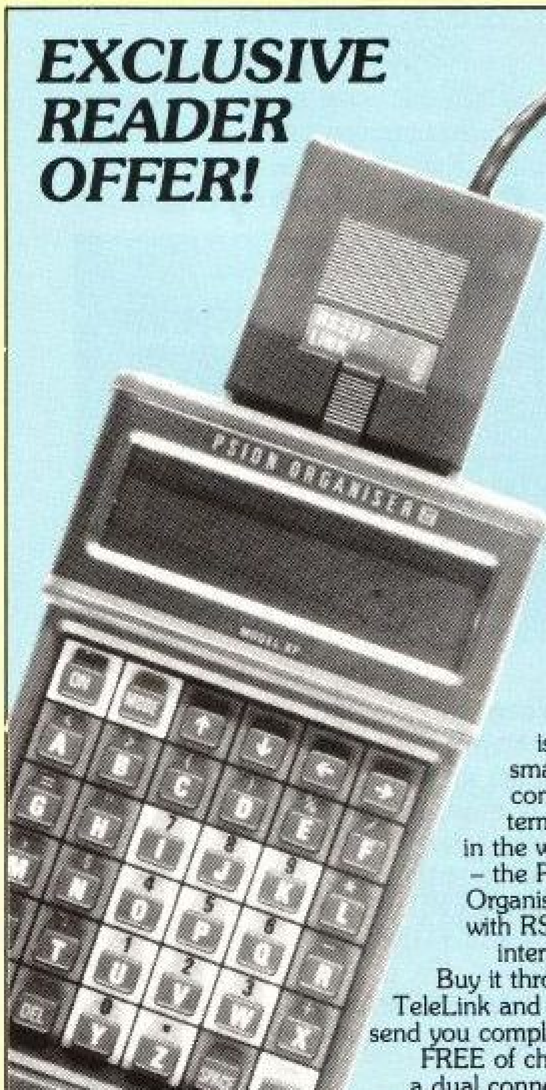


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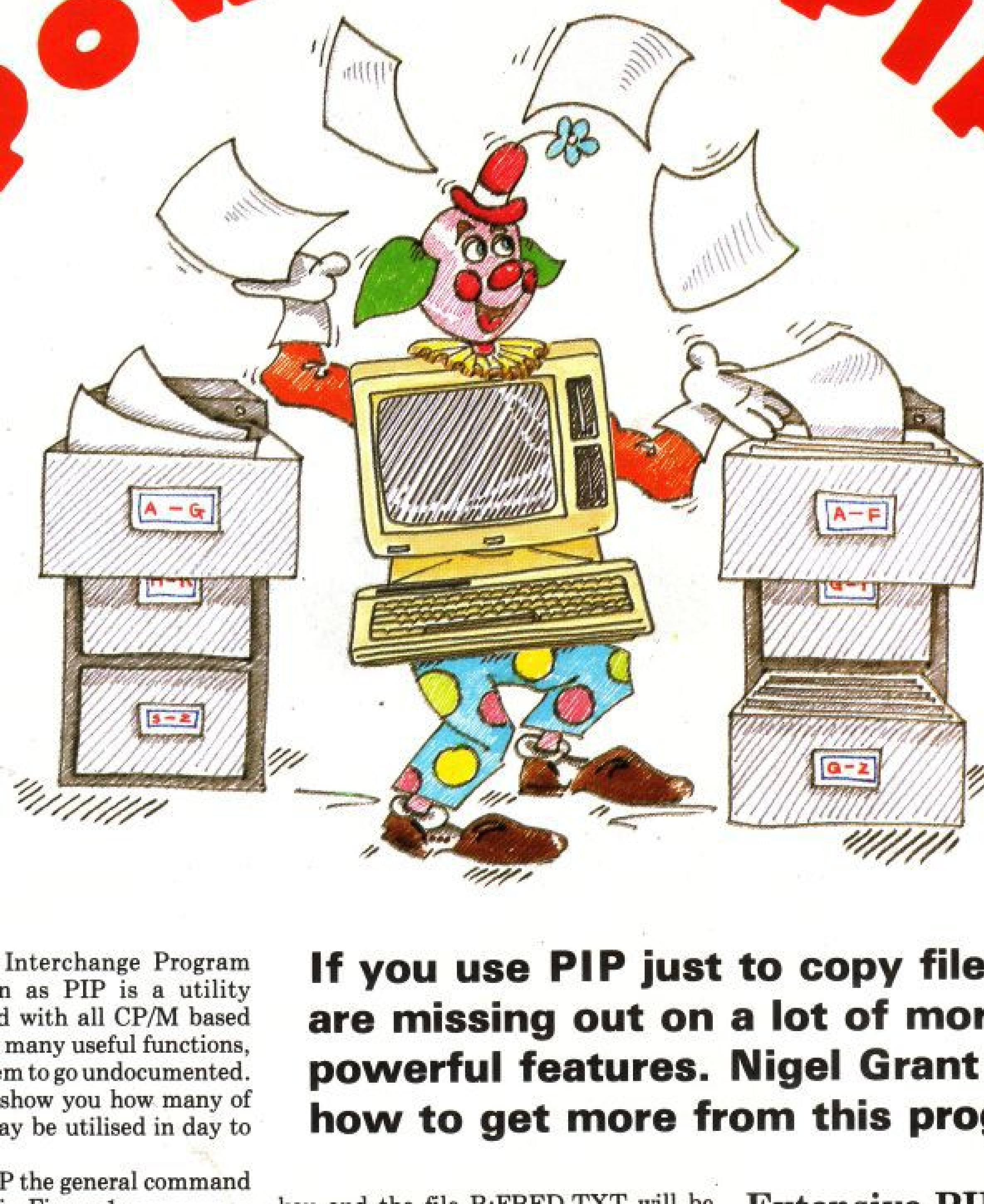
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Power to PIP



If you use PIP just to copy files you are missing out on a lot of more powerful features. Nigel Grant shows how to get more from this program.

The Peripheral Interchange Program otherwise known as PIP is a utility program included with all CP/M based systems. PIP has many useful functions, some of which seem to go undocumented. This article will show you how many of PIP's features may be utilised in day to day use.

When using PIP the general command format is shown in Figure 1.

Imagine that you have a file called FRED.TXT on your B drive and you want to make a copy of it on to drive A. At the A> prompt simply type the following line:

PIP A:FRED.TXT=B:FRED.TXT

When you have typed it press the Return key and the file B:FRED.TXT will be copied to drive A. If you had wanted to call the file copied on to drive A by a different name then this is how to do it:

PIP A:HARRY.TXT=B:FRED.TXT

The above statement will copy the file B:FRED.TXT to drive A and rename it to HARRY.TXT.

The drive on to which you are copying. → **PIP destination:**
The drive from which you are copying. → **source:**

PIP destination: filename= source:filename

The file to which you are copying. → **filename=**
The file from which you are copying. → **filename**

Figure 1: The PIP command entries

Extensive PIPping

When there is more than one file to be copied PIP should be called on its own. This is achieved as follows:

A>PIP

When you press Return an asterisk (*) appears on the screen. This is the PIP prompt, meaning that PIP is ready for you to enter instructions.

Let's set up an example of the PIP sequence required to copy three imaginary files: FRIENDS.DBF, ACCOUNTS.DTA and FONTASY.COM.

Step 1. To copy the file FRIENDS.DBF from drive A to drive B and rename it OLD.DBF, type:

B:OLD.DBF=A:FRIENDS.DBF

and press Return.

Step 2. To copy ACCOUNTS.DTA from

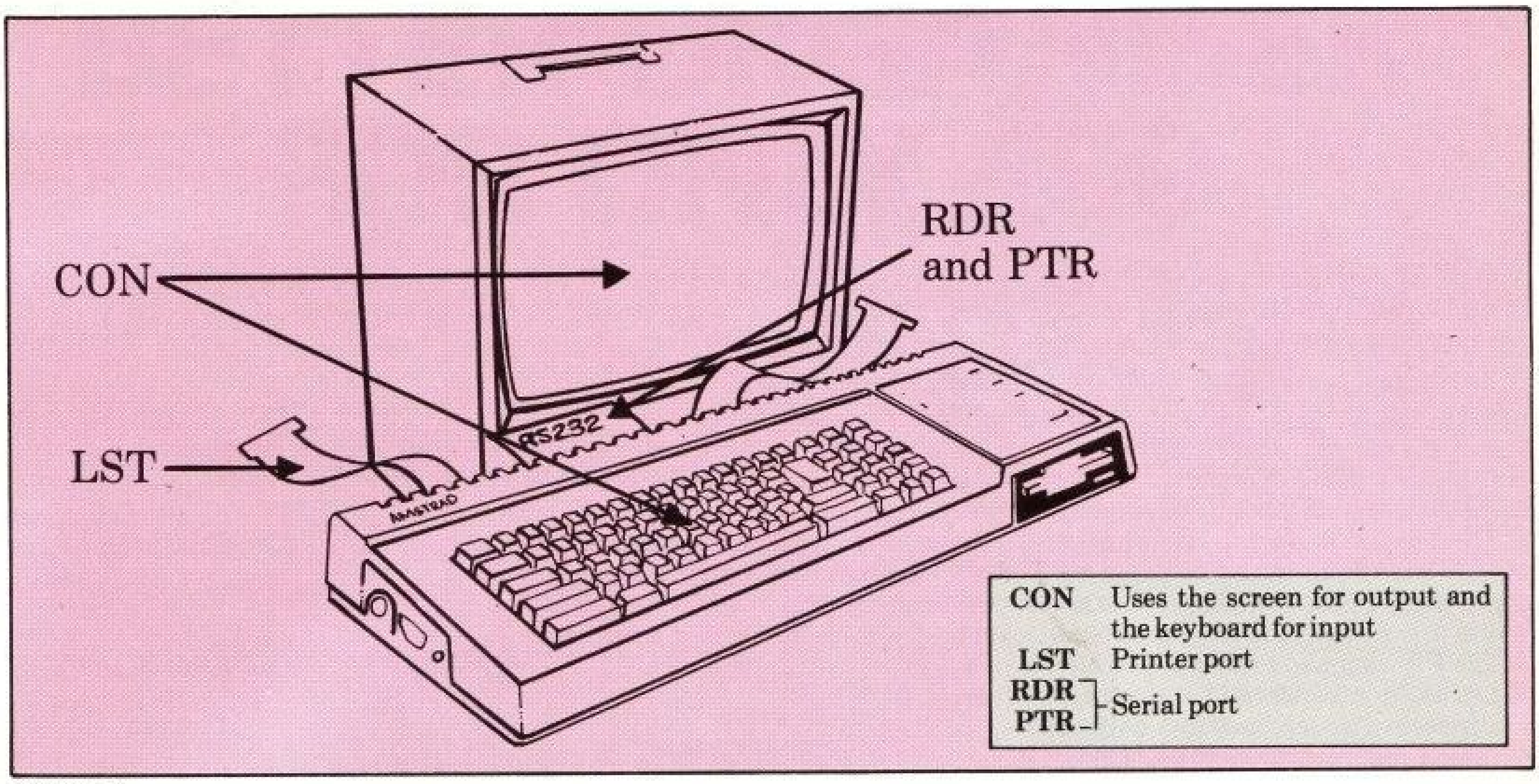


Figure 2

drive A to drive B and rename it ACC.DAT, type:

B:ACC.DAT=A:ACCOUNTS.DTA

and press Return.
Step 3. To copy FONTASY.COM from drive B to drive A, type:

A:FONTASY.COM=
B:FONTASY.COM

and press Return.
Step 4. To return from the PIP prompt (*) to the CP/M A> prompt press Return.

The PIP sequence we have just carried out would look like this on screen:

```
CP/M Plus  Amstrad Consumer Electronics plc

v 1.1, 61K TPA, 2 disc drives, 368K drive M:

A>pip
CP/M 3 PIP VERSION 3.0
*b:old.dbf=a:friends.dbf
*b:acc.dat=a:accounts.dta
*a:fontasy.com=b:fontasy.com
*↑C
A>
```

PIP and wildcards

PIP is a very convenient way of copying groups of related files using the inclusive CP/M wildcard characters ? and *.

For example, to copy all files on drive A whose names begin with AMSTRAD to drive B, type:

PIP B:=A:AMSTRAD.*

Or to copy all files from drive A to drive B, type:

PIP B:=A:*.*

Since using wildcard characters in PIP is the most efficient way of copying multiple files of the same type between discs, it is worth devising a standard way of naming files to make the most of this.

Merging files

If you have three or four small files and you wish to create one larger file PIP is the program to use. This is very simple and can be achieved in seconds.

Let's say that on drive A you have three files called TOM, DICK and HARRY, and you wish to merge these to create a file called FRED. The command is as follows:

PIP FRED=TOM, DICK, HARRY

This sequence will create a file on drive A called FRED which contains information from the three old files TOM, DICK and HARRY.

Getting switched on

All the examples given so far show the use of PIP in its standard mode. PIP has many other options available, most of which are set up by software switches.

A software switch is a command or series of commands issued at the end of a PIP instruction and enclosed in square brackets. These switches cover a multitude of tasks, and the command format when using them is:

PIP destination: filename=
source:filename[switch]

Note that no spaces appear between the source:filename and the brackets.

One of the most commonly used switches is [V]. This informs PIP that all data transfers should be verified. To verify a transfer use:

PIP A:FRED=B:FRED.DOC[V]

A useful trick for those wishing to convert WordStar to standard Ascii files is to use another of PIP's switches, [Z]. For example, on drive B there is a file called LETTER.DOC which you want to use in another program but when the file is loaded it displays superfluous characters. PIP can remove these like this:

PIP B:LETTER.DOC=B:LETTER
ASC[Z]

When transferring the file in the last example it would have been quite easy to have PIP display on-screen what was happening during the transfer. This is achieved via the [E] switch. The command line to give a screen display of the above transfer would look like this:

PIP B:LETTER.DOC=B:LETTER
.ASC[ZE]

Beware – only use the [E] switch when transferring TEXT files. If it is used on any other type of file then strange things may happen.

The above examples show only a few of the simpler software switches available. PIP has many more complex switches that cannot be covered in an introductory article – for further information consult an advanced CP/M users guide.

More than just discs

So far we have only scratched the surface of PIP's capabilities. Not only can it be used for copying files between discs but also for transferring data between any logical CP/M devices.

These can be separated into three distinct categories – the screen and keyboard, the printer port and the serial



port. In a CP/M environment each of these devices has a name – see Figure 2.

These device names are used when you wish to use PIP as a tool for redirecting input and output. Complex as this may sound it is really rather easy to achieve.

The PIP command format for achieving redirection is shown in Figure 3.

Suppose you are sitting at your computer and wish to print a file called MEMO.TXT that resides on drive B, but loading your word processor seems a bit of a chore. PIP can send this file to your printer with a very simple statement. Type:

PIP LST:=B:MEMO.TXT

This tells PIP to take the file called MEMO.TXT from drive B and transfer it to the output device called LST – which just happens to be your printer.

PIP has three switches that are used when outputting to external devices:

[D]n: Specifies that the destination device copies only up to column n. For example:

PIP LST:=B:MEMO.TXT[D40]

This command would only print the first 40 columns of each line contained in the file MEMO.TXT.

[F]: Removes all form feeds included in the source file.

[P]n: Specifies the number of n lines per page.

For example:

PIP LST:=B:MEMO.TXT[F P65 D65]

The above statement would output the file B:MEMO.TXT to the printer with a Right Margin of 65 columns, a Page Length of 58 lines and remove all Form Feeds.

Another example of using PIP to save loading complex programs is in the creation of very small text files. You find yourself having to create a small three line file containing the lines:

Hello John.
Got a new motor?
Yes I have.

Type:

PIP JOHN.MTR=CON:

After pressing Return the cursor will jump directly underneath the line that you have just typed and the screen will look like this:

A>PIP JOHN.MTR=CON:
#

PIP is now waiting for you to input information into the file JOHN.MTR from the CON: device, the keyboard. Enter the information and the screen will look like this:

A>PIP JOHN.MTR=CON:
Hello John
Got a new motor?
Yes I have.

Now you have entered the text we have to tell PIP that the file is complete by pressing the CTRL (ALT on the PCW) and Z keys simultaneously. When you have pressed CTRL Z there will be a slight pause while PIP writes the file JOHN.MTR to disc and you will be returned to the CP/M A> prompt.

In the above example CON: was used as an input device so this meant the keyboard. If CON: is used as the output device this tells CP/M to use the screen. This means that we have now created a file called JOHN.MTR that can be viewed using PIP. To view a file we simply have to reverse the syntax. Type:

PIP CON:=JOHN.MTR

The file JOHN.MTR will now be displayed on-screen.

A more advanced feature of PIP is its ability to totally redirect all input and output. An effective use of redirection turns the computer into a very simple typewriter.

Using PIP it is possible to redirect all output from the keyboard and send it to the printer. The only problem with doing this is that screen output is redirected to the printer so your only way of knowing what you are typing is to look at the paper. Even so this is a very useful trick for printing one label. Try:

PIP LST:=CON:

Everything you now type will be printed on your printer. To stop this happening simply press CTRL Z and your machine will return to normal.

Do's and don'ts with PIP

- When copying between discs always ensure the destination disc has enough room for the file(s) that you are copying.
- When copying a file within a disc always either rename the file or change the file extension.
- PIP will copy a source file onto a destination disc containing a file of the same name, erasing and overwriting the old file. Always check the destination disc for this or you may be sorry.
- Before overwriting a Read Only file PIP asks for confirmation. Press Y to overwrite or N to prevent this from happening.
- PIP copies all file attributes such as (RNO, R/W, DIR & SYS) with files that it copies. For example a READ ONLY file will stay READ ONLY if copied with PIP.

Even though PIP has many useful features I would advise new users to get in touch with the CP/M user group and obtain the Public Domain program SWEEP, which has all of the facilities mentioned above but is completely menu driven.

The ultimate destination, can be either any supported device or a file.

↓

PIP output=source:input

↑

Can be either a file or any supported device.

Figure 3

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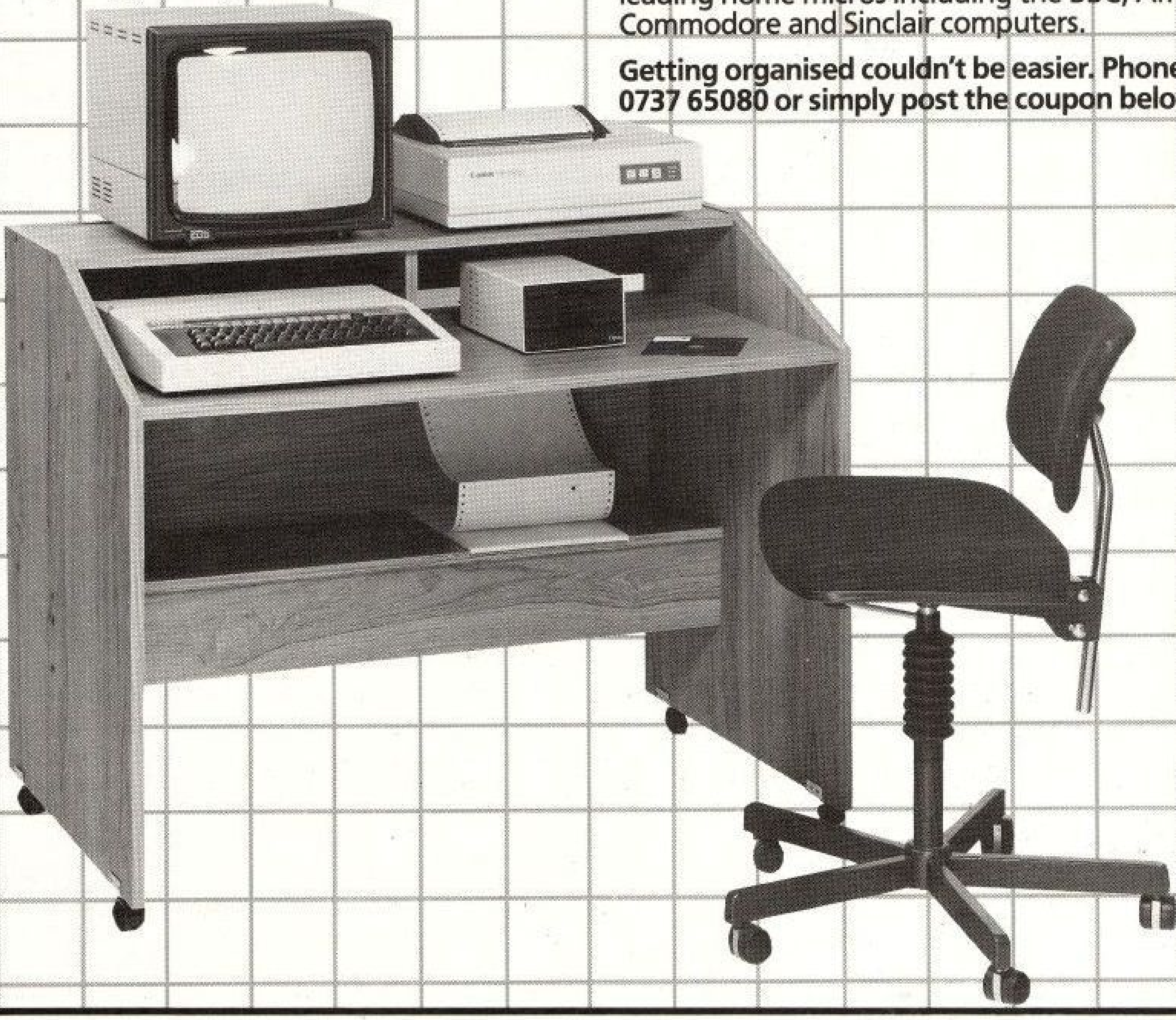
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Getting to know MS-DOS

The PC 1512 brings with it two new operating systems. Robert Schifreen looks at MS-DOS.

Probably the most widely used operating system on micros is MS-DOS (MicroSoft Disc Operating System), the system used in the IBM PC. When the PC 1512 is operating under MS-DOS, the machine is just about totally compatible with the IBM PC.

The IBM and most clones are still being shipped with MS-DOS version 2.11. – on a true IBM it's called PC-DOS. Using version 3.2 certainly doesn't mean that your Amstrad is any less IBM compatible. What it does mean is that you have access to many more facilities than do people using MS-DOS 2.11.

I'll start with a brief look at some of the facilities that MS-DOS provides for the Amstrad PC 1512. In future articles, I'll look at individual ideas and commands in more detail.

Turning on

The Amstrad PC comes with two different operating systems, Dos Plus and MS-DOS 3.2. This article only concerns MS-DOS, so you will need the MS-DOS 3.2 disc handy. Every time you turn on the computer, you have to load in the operating system from a disc.

To start MS-DOS, follow the instructions in the manual, and once it is loaded you will get a prompt on the screen something like this:

A>

This shows that MS-DOS is waiting for you to tell it what to do, while the A means that you are using drive A. If you type command that needs to access a disk, without specifying a drive, MS-DOS will use the drive whose name appears in the prompt. Drive A is known here as the default drive, and is always set initially to the drive that you use to start MS-DOS from.

To change the prompt, you can use the PROMPT command. Try these:

If you type:	The prompt changes to:
PROMPT	A>
PROMPT Today is dg	Today is Tue 9-5-86>
PROMPT You are in drive $d	You are in drive A
PROMPT Now what?>	Now what?>
PROMPT The time is $t	The time is 12:54:13

Using the Prompt command

By the way, your copy of the MS-DOS master disc is very precious, as you can't use the computer without it. You should never use the master copy of the disc to start the machine, so if you've not already made a copy of the disc, look up the DISKCOPY command in the manual and make one or more now.

Of system discs and data discs

As I mentioned earlier, MS-DOS controls the way the computer reads information from discs. So, how can the computer load MS-DOS from the disc in the first place if MS-DOS reads the discs?

The three programs that make up MS-DOS are always stored in a certain place on the disc (well, two of them are anyway). That way, the very simple program in rom in the computer can find and load them each time. Once MS-DOS is loaded, the computer's rom hands over to it.

Three special programs have to be on the disc that starts MS-DOS, and because two of them have to be in a special place on that disc, you can't simply copy the programs over from another disc, as they probably won't end up in the correct place. To prepare a disc that can be used to start up the computer, look up the SYS command in the manual.

The three special programs are called IBMDOS.COM, IBMBIO.COM and COMMAND.COM. You can see COMMAND.COM by using the DIR command as described below. The others are what is known as hidden files, which means that they don't show up on the directory – so you don't know they're there.

Looking at a disc

To see the list of files on a disc, type DIR. If you are going to follow the examples in this article, you should keep the MS-DOS disc in the drive. Assuming that you have, you will see something like this when you type DIR.

```
 Volume in drive A is 46001
 Directory of  A:\

IMAGES       <DIR>     14-07-86   12:13
COMMAND  COM    23612  14-07-86   12:13
ANSI     SYS     1699  14-07-86   12:13
CONFIG   SYS       60  14-07-86   12:13
DRIVER   SYS     1110  14-07-86   12:13
RAMDRIVE SYS     6566  14-07-86   12:13
AUTOEXEC BAT       88  14-07-86   12:13
GEM      BAT       46  14-07-86   12:13
GEM3     BAT      786  14-07-86   12:14
ANSI     COM      139  14-07-86   12:14
APPEND   COM     1725  14-07-86   12:14
ASSIGN   COM     1523  14-07-86   12:14
MORE     COM      282  14-07-86   12:14
MOUSE    COM     6984  14-07-86   12:14
RTC      COM      397  14-07-86   12:14
SYS      COM     4639  14-07-86   12:14
ATTRIB   EXE     8234  14-07-86   12:14
CHKDSK   EXE     9680  14-07-86   12:14
COMP     EXE    14448  14-07-86   12:14
DEBUG    EXE    15647  14-07-86   12:14
DISKCOMP EXE     3808  14-07-86   12:15
DISKCOPY EXE     3936  14-07-86   12:15
EDLIN    EXE     7356  14-07-86   12:15
EXE2BIN  EXE     3050  14-07-86   12:15
FDISK    EXE    16444  14-07-86   12:15
FIND     EXE     6403  14-07-86   12:15
FORMAT   EXE    10957  14-07-86   12:15
GRAFTABL EXE     8194  14-07-86   12:15
GRAPHICS EXE    13314  14-07-86   12:15
JOIN     EXE     8942  14-07-86   12:15
KEYBUK   EXE     2985  14-07-86   12:16
LABEL    EXE     2750  14-07-86   12:16
MODE     EXE    13928  14-07-86   12:16
PRINT    EXE     8824  14-07-86   12:16
RECOVER  EXE     4145  14-07-86   12:16
REPLACE  EXE     4852  14-07-86   12:16
SHARE    EXE     8544  14-07-86   12:16
SORT     EXE     1898  14-07-86   12:16
SUBST    EXE     9898  14-07-86   12:16
TREE     EXE     8556  14-07-86   12:17
XCOPY    EXE     5398  14-07-86   12:17
        41 File(s)     4096 bytes free
```

The top line gives you the name of the disc. Each disc can have a name, which you assign with the LABEL command.

The next line tells you that you are looking at the root directory on the disc. MS-DOS allows you to have lots of directories on each disc, which helps you to keep things tidy and makes finding files easier. We'll look at directories next time.

Next comes a list of all the files on the disc. The first column gives the name of the file, then comes the file's extension. The full name of a file is its first-column name followed by a full stop, followed by its extension. So the first file in the list has the name ANSI.SYS.

The third column tells you how many bytes the file occupies. The last two columns tell you the date and time that the file was saved.

Finally, after the list of files, you are told how much space is left on the disc. Each disc holds 360k, or 362000 bytes.

The TYPE command displays the contents of a file on the screen. Files with extensions of COM or EXE are programs, which will probably be meaningless if you try to look at them with the TYPE command.

The function keys

On the left of the keyboard are the 10 function keys. Many programs use them to provide certain facilities to the user.

Normally, only two of the function keys are any use to you in MS-DOS. If you type a command (followed by RETURN) and then press the F3 key, the command that you just typed reappears – just press RETURN again to execute it. This is quite handy if you want to do the same thing a number of times.

Pressing F1 also repeats the last command typed. However, instead of repeating it all at once, it brings back one character each time you press it.

Ready to explore

Before you start to explore MS-DOS on the Amstrad PC, make a copy of the MS-DOS disc as described in the section on DISKCOPY in the manual. Most of the programs on it are commands, which you can't use unless there is a copy in the disc drive, just like CP/M.

Not all MS-DOS commands are on disc, though. Some are built into MS-DOS (they're part of COMMAND.COM which is loaded once when you turn on the computer) and you don't need a disc in a drive to use them.

To get you started, here's a brief description of all the files on the MS-DOS disc, and a list of the built-in commands.

Built-in commands

CHDIR	Change the current directory.
CLS	Clears the screen.
COPY	Make a copy of a file.
CTTY	Allow control of the computer from another terminal.
DATE	Set the computer's calendar.
DEL	Delete a file.
DIR	Get a list of all files on a disc.
MKDIR	Make a new directory on a disc.
PATH	Tell MS-DOS where to look for a file.
PROMPT	Change the MS-DOS prompt.
PROMPT	Customise the MS-DOS prompt.
RENAME	Change the name of a file.
RMDIR	Remove a directory.
SET	Set up certain MS-DOS parameters.
TIME	Set the clock.
TYPE	List the contents of a file.
VER	Displays the version of MS-DOS being used.
VOL	Displays the name of the disc in use.

What's on the MS-DOS disc?

A variety of programs and files with the following capabilities:

ANSI.SYS Known as a device driver, A variety of programs and files with the following capabilities it allows you to redefine keys, including the function keys, by typing certain Escape sequences. Also lets you control screen modes and other functions of the machine.

ASSIGN.COM Assigns names to devices. Useful if you have more than one printer, say, and want to select which one a program uses.

ATTRIB.EXE Protects a file from being erased from a disc.

BACKUP.COM Backs up a hard disc onto floppy discs.

CHKDSK.COM Checks out a disk. Will tell you how much of the disc is being used, and whether it contains any errors. on it.

CONFIG.SYS A file which you put on a disc. It includes a number of special configuration commands for MS-DOS which are obeyed when you start up.

COMP.COM Compares two files and reports any differences.

DISKCOMP.COM Compares two discs and reports any differences.

DISKCOPY.COM Copies one disc to another.

EDLIN.COM The MS-DOS line editor. A very simple word processor, better than nothing but not very sophisticated.

FDISK.COM To format a hard disc.

FIND.EXE A special type of program known as a filter. Allows you to look through a file for a specified string.

FORMAT.COM Prepares new floppy disks for use with MS-DOS.

GRAFTABL.COM Allows you to print graphic screen dumps from MS-DOS programs.

GRAPHICS.COM An extended set of graphics characters which programs can use once they have been loaded.

JOIN.EXE Joins two directories so that they appear as one. Don't use this command unless you know what you are doing, as you can lose track of files.

KEYBFR.COM Allows the PC to be used with a French layout keyboard...

KEYBGR.COM . . . or German

KEYBIT.COM . . . or Italian

KEYBSP.COM . . . or Spanish

KEYBUK.COM . . . or English

LABEL.COM Lets you name a disc.

MODE.COM Sets the screen mode.

MORE.COM A filter that stops display after each 24 lines, and asks you to press a key to continue.

PRINT.COM TYPEs a file on to a printer.

RECOVER.COM Attempts to recover lost files from a disc which develops errors.

RESTORE.COM Restores files that were backed up with the BACKUP command.

SHARE.EXE Allows the computer to be used on a network.

SORT.EXE Sorts data. Try typing SORT (followed by RETURN). Then type a list of words, pressing RETURN after each. Type Ctrl-Z when you have finished and see what happens.

SUBST.EXE Makes a directory on a disc behave as if it was a separate drive.

SYS.COM Makes a disc into an MS-DOS system disc that can be used to start up the computer.

TREE.COM Displays a list of all the directories on a disc.

VDISK.SYS If you have a file called CONFIG.SYS that contains the command:

DEVICE = VDISK.SYS

then you will set up a ram disc.

Creating a file

With MS-DOS there's an easy way to create a file on a disc. First, get a disc with some space on it – don't use the master disc that came with the machine. Load MS-DOS and get to the A- prompt. Now, suppose you want to make a file called TEST. Type:

COPY CON TEST

What you are doing is using the COPY command, which is normally used to copy files. You would normally type COPY followed by two filenames. The first is the one that you want to copy, and the second is the name you want to give to the new version. In the example above, by specifying CON as the first name, you copy from the keyboard to a file called TEST.

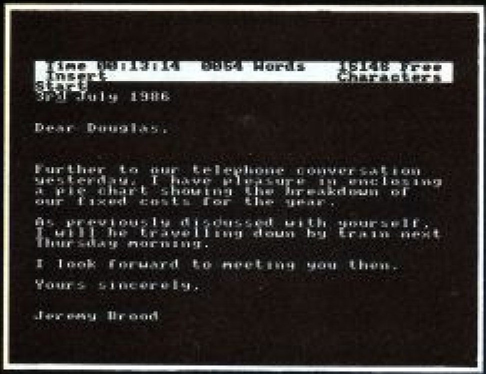
There won't be any prompt on the screen at the moment. Try typing some lines of text. When you have finished, type Ctrl-Z, which MS-DOS interprets as being the end of the file that it is copying from.

The prompt should return, and you now have a file on the disc. Try using the TYPE command to look at it. To edit the file, look up EDLIN in the manual and program to alter the file that you created.

As I hope you are now starting to see, MS-DOS can be useful. There are many wonderful facilities that MS-DOS provide, and I have only started to scratch the surface. See you next time.

ACU

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DATABASE
Build up a versatile card index, use the flexible print out routine, do powerful multi-field sorting, perform all arithmetic functions, link with the word processor – and more!



LABEL PRINTER
Design the layout of a label with the easy-to-use editor, select label size and sheet format, read in database files, print out in any quantity – and more!

...and at a price

Mini Office II offers the most comprehensive, integrated suite of programs ever written for the Amstrad – making it the most useful productivity tool yet devised.

A team of leading software authors were brought together to devote a total of 26 man years of programming to the development of Mini Office II. What they have produced is a package that sets new standards in home and business software.

The sample screenshots above illustrate just a few of the very wide range of features, many of which are usually restricted to software costing hundreds of pounds. Most are accessed by using cursor keys to move up and down a list of options and pressing Enter to select.

Is it that easy to use? Several leading reviewers have already sung its praises on this very point.

Yet possibly the best advertisement for Mini Office II is that it comes from the same stable that produced the original Mini Office package back in 1984.

That was so successful it was shortlisted in two major categories of the British Microcomputing Awards – the Oscars of the industry – and sold in excess of 100,000 units!

It was up to Mini Office II to take over where the first Mini Office left off, with 32 extra features, two additional modules, a program to convert existing Mini Office files to Mini Office II format, and a 60 page, very easy to follow manual.

This is the package thousands of Amstrad owners have been waiting for – and at a price everyone can afford!

ONE package!



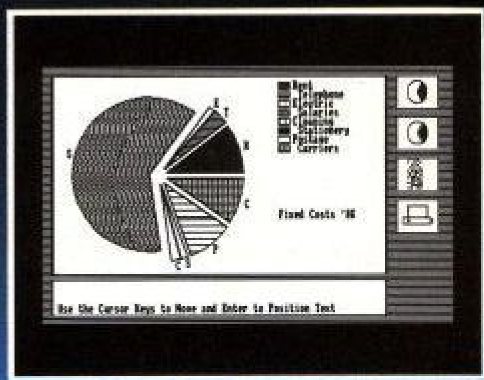
SPREADSHEET

Prepare budgets or tables, total columns or rows with ease, copy formulae absolutely or relatively, view in either 40 or 80 column modes, recalculate automatically – and more!



GRAPHICS

Enter data directly or load data from the spreadsheet, produce pie charts, display bar charts side by side or stacked, overlay line graphs – and more!

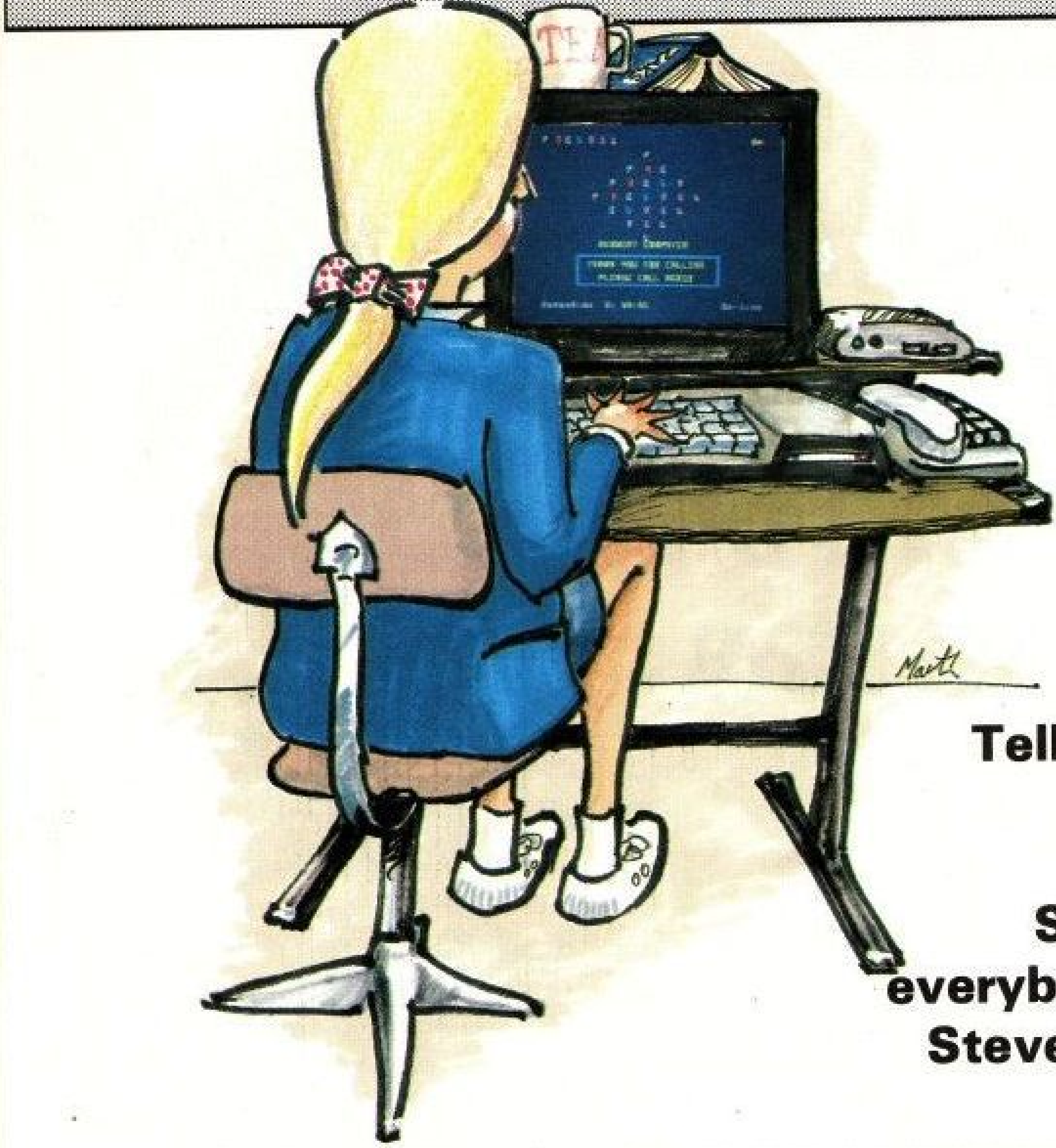


COMMS MODULE

Using a modem you can access services such as MicroLink and book rail or theatre tickets, send electronic mail, telex and telemessages in a flash – and more!



that can't be matched!



It's just a phone call away...

Telling the history of viewdata is a bit like describing the invention of the wheel. Suddenly it was there – and everybody accepted its existence. Steve Gold recalls its beginning.

Back in the mid-1970s, as witnessed by the heavy TV advertising of that period, the then Post Office was very keen for us all to use the telephone during off-peak periods. After all, this was when all the equipment used by office staff during weekday business periods lay idle.

As part of its drive to encourage us all to use the phone during evenings and weekends the Post Office asked its top staff to come up with a revolutionary way to get us all on the phone. The result of this was the brilliantly conceived, but initially poorly marketed, Prestel service.

It was launched on an unsuspecting public during the late 1970s and was originally thought of as an information carrier mirroring the teletext services. Most people today have come to know these as Ceefax and Oracle – signals which are broadcast with standard TV transmissions.

When Prestel was launched high ranking officials within the Post Office and government were heard to predict great things for the pioneering service. Figures of two million terminals and up in the UK by 1985 were heard.

At the time of writing Prestel only has 60,000 or so subscribers – so what went wrong? To find the answer we have to look back at the phenomenal advances in power for the average home computer which have occurred in the last decade or so.

Whereas Prestel was conceived in an environment where 1k of ram was expensive, now we think of 512k as being the norm. We have the likes of Jack Tramiel and Alan Sugar to thank for that.

Sheer computing power and an insatiable thirst for interactive communication have turned Prestel's very concept on its head. Now the great information bank plays host to a whole range of interactive communicating services. These include Chatline – a real time multi-user CB facility, Gallery – publish your own pages on Prestel (subject to legal niceties) almost instantly, and Mailbox – real time messaging between users, to mention but a few.

Today, almost a third of Prestel's 60,000 user base is taken by computer users who have bought a modem and plugged into the service, using the power and keyboard of their home micros to cut the cost of logging on to Prestel.

What's on tonight

Because Prestel is what can best be described as a "living" database, its contents and style inexorably change for, one hopes, the better rather than the worse. Small information providers, often home workers using a simple computer and modem, rub shoulders with the big boys such as British Rail and the English Tourist Board.

For the average home user Prestel offers a range of information spread across 250,000 frames of information. It plumbs several areas to surprising depth, for example the Consumers Association, but leaves great tracts of useful data – town details, maps and so on – quite unaccounted for.

This is perhaps due to Prestel's policy of providing a basic infrastructure for information providers (IPs) to distribute their information on. Just as advertising magazines such as Exchange & Mart are heavily reliant on their information providers (advertisers in E&M's case), to a great extent so is Prestel.

In many ways Prestel is a supply driven system, since only firms who require a high public profile or are satisfied their outlay is justified by the potential profits from their pages are interested.

Such an environment, coupled with the still-monolithic might of British Telecom, is not conducive to innovation to say the least.

Despite such an austere environment certain areas of Prestel thrive and offer, in their own small way, a highly original service. One information provider is Micronet 800, which rents some 25,000 pages from Prestel and fills them with micro-orientated information, fun and games.

Launched back in April, 1983 as a joint project between British Telecom and East Midlands Allied Press (EMAP), Micronet now has 20,000 subscribers – nearly a third of the entire Prestel subscriber base – and is one of the more powerful IP's on the service. Perhaps realising this, BT has just upped its

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Both languages come as complete packages of standard Amstrad 3" disks with full documentation.

The most complete PASCAL £49.95.

PASCAL/MT+ is full ISO standard PASCAL, extended to provide a comprehensive professional programming environment for industrial, business and educational applications.

It's faster, more versatile, more portable and easier to use in sophisticated applications demanding segmented development.

The package includes a compiler to generate relocatable object files; a linker to generate executable files from compiler outputs; a run-time support library covering transcendental functions, machine interrupts and other tasks; a disassembler and a symbolic debugger.

As well as standard ISO numerics, PASCAL/MT+ supports BCD and floating point real numbers for arithmetic precision. Special features reduce program size and enhance I/O capabilities. PASCAL/MT+ is the fully implemented PASCAL you can start with, stay with and never outgrow.

Ten times faster with CBASIC £49.95.

CBASIC Compiler is a native code compiler that allows separate modules to be written, tested and combined to create a complete program. And it combines machine code speed with BASIC ease to produce programs that execute eight to ten times faster than the same interpreted programs.

A fully integrated set of device independent graphics statements and functions permits direct output to any graphics peripheral without recompiling.

Extended precision 14-digit decimal arithmetic ensures that fractional parts of pound amounts are exact and ledgers balance to the penny.

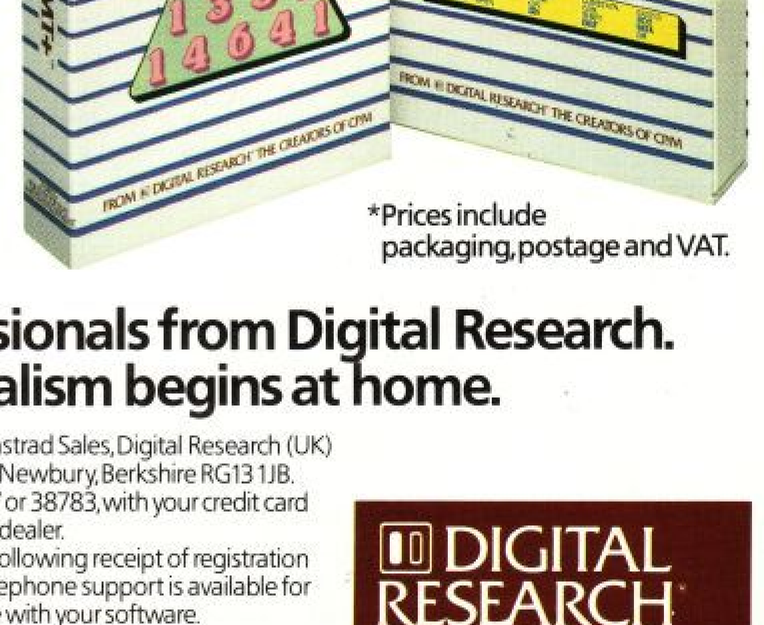
CBASIC Compiler also supports integer arithmetic, so you can use integer variables to increase execution speed.

Multiple line function capability with multiple parameters provides features found in block-structured languages. Local variables can be declared in an MLF. MLF functions may be declared as external, belonging to an entirely different program module.

Development Potential.

PASCAL/MT+ and CBASIC Compiler run on the Amstrad CPC 6128, PCW 8256, CPC 664 and CPC 464 with DD-1 disk drive. Use of graphics with CBASIC Compiler is only available on CPC 6128 and PCW 8256.

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shareholding in the concern to 40 per cent. A newcomer, Bell Canada Enterprises, hold 20 per cent.

Micronet under the microscope

By the time of the Micronet launch, Prestel was an ailing beast. It was almost five years old and BT was getting tired of pumping millions in only to see a subscriber base of 30,000 looking at government releases, advertising and patchily informative (but chargeable) information frames.

In many ways Micronet has been the saviour of Prestel, "rescuing" it with a fat 20,000 boost in subscribers, who spend a lot of chargeable BT connect time logged on to the service.

Because the service is a microcosm of its paper equivalent – a computer magazine – it is structured in a very similar way. It contains product reviews, hot news, letters pages and so on. But because of the volatile and instantaneous nature of the medium upon which it is written – the Prestel computers themselves – it has evolved.

Under the guidance and control of a surprisingly small number of incredibly enthusiastic and dedicated staff, it's become a very up-to-date electronic magazine – often copied, but never beaten.

Since even the weekly computer magazines have a few days delay between writing the news and seeing the magazine in the great British public's hands, Micronet has an obvious edge.

The service brings subscribers the news literally minutes after its occurence. I've used it myself to report from shows and press launches, and created frames for immediate release.

Communication's the answer

Because the majority of Micronet subscribers are a gregarious lot they exploit the two-way electronic medium on which Prestel is published. They send each other thousands and thousands of electronic letters – mailboxes in Prestelese.

Coupled with pre-addressed interactive frames (called response frames), the output of the subscribers often matches the staff at Micronet 800 for originality and sheer volume.

To cope with this, and perhaps steer the mailbox activity away from Micronet itself, Micronet technical manager Mike Brown has created an on-line facility called Chatline. Subscribers fill in a response frame which, once sent, is retrieved centrally by Micronet and updated to all the Prestel computers.

In this way, users can see their chat distributed to all Prestel users (assuming they are on line) in as little as 10 seconds. It's quite surprising to see how many people use the chatlines to carry on a multi-user conversation with several people, despite the fact that hundreds of miles separate them.

And all this for little more than the price of a local phone call. It's not difficult to see how many subscribers get hooked and spend a lot of time on-line.

Telesoftware-a-gogo

A subscription to Micronet, including Prestel, will set you back a shade over a pound per week. Thereafter, provided you don't access any chargeable frames, the running costs generally work out at around 50 pence an hour during non-office hours, which is surprisingly cheap entertainment.

Many people will tell you stories of phenomenally high telephone bills. But unless the user spends literally all his leisure hours on-line, it is simply not possible to run up such large bills.

Most users can expect a telephone bill around £20 or so higher per quarter – a lot of entertainment for the price of a couple of nights out.

Among the multitude of pages and services on Micronet that your subscription covers, are the free program listings that you usually find in a computer magazine.

But with Prestel, such listings can be automatically downloaded and fed into your micro at the touch of a button. Such programs are known as telesoftware – they can be downloaded via the telephone.

While a proportion of the telesoftware available on the Prestel Microcomputing areas is chargeable (more of which later), a fair number of programs for most popular micros, including the Amstrad range, are free for the price of a phone call.

By merely going to a certain frame on Prestel and activating your software, a complete program can be downloaded and run/saved on your home micro. Think how much tedious typing in that will save!

Micronet vs the rest of the world

Being the biggest microcomputing IP on Prestel doesn't mean that Micronet is the be-all and end-all of computers on the service.

There are two other micro-orientated areas on Prestel that will interest Amstrad owners. The first is Viewfax 258, to be found on (you guessed it) page 258.

It's a small but active computer section run by Birmingam-based Lindsey Reid. Assisted by a small band of staff Lindsey provides a microcosm of Micronet itself, including news pages, telesoftware and several home user enthusiast areas.

Viewfax is the database which is of most interest to Amstrad owners because of the Amsnet subscription.

Amsnet contains news and reviews of interest to Amstrad owners and has a very clubby feel. The most lively area is the letters page.

Updated daily it offers help to new users as well as quite technical advice from Arnor, Virgin and Amstrad, who all log on in their spare time. If you miss a day's letters you feel left out. Even the editor of this magazine is known to chip in the occasional comment.

Amsnet is the best source of telesoftware. There is a little Public Domain software, some programs contributed by readers and listings from ACU, all of which can be downloaded for free.

The great unsung heroes

While both Micronet 800 and Viewfax 258 areas are staffed by comparatively few people, they both use the talents of enthusiastic amateurs to provide an economic service to Prestel users.

Often, the activities of the home-workers are provided for little more than a reimbursement of out-of-pocket expenses. This is a considerable saving on employing full-time staff to write news, product reviews and so on.

In fact, if several of the home-workers on Prestel dropped their amateur status, it's almost certain that the charging structure of Prestel would be unable to support full-time workers creating such areas. The end losers would be the Prestel subscribers themselves.

Costing it all up

So there you have it – a potted history of Prestel. On the surface a giant version of Ceefax and Oracle on the TV. When examined closely, as it is frequently by its subscribers, a hotbed of activity from what many have described as a vociferous minority.

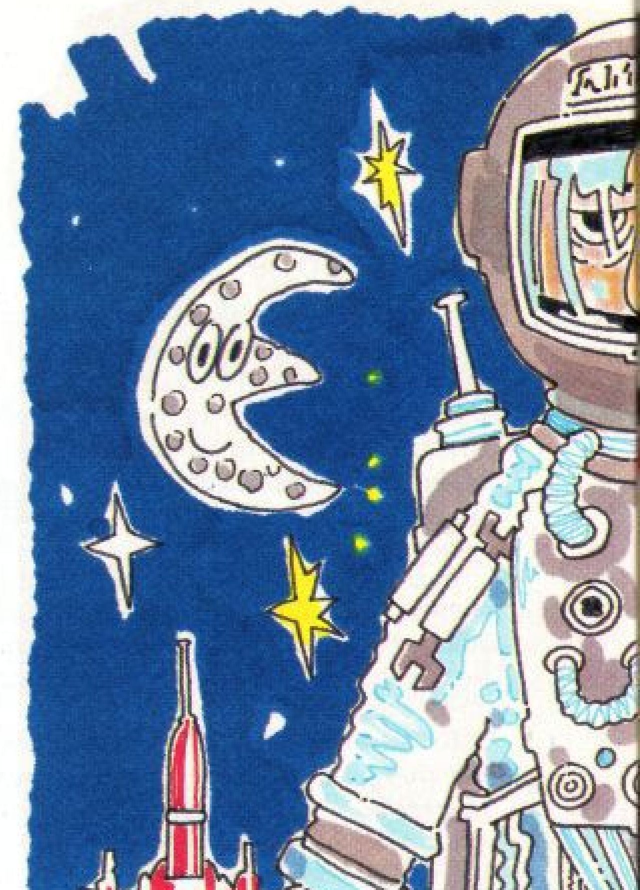
I think that Prestel, with the Microcomputing area as a value-added option, offers tremendous value for money. And the opportunity to make new friends with people many hundreds of miles away.

Indeed, if it weren't for Prestel and Micronet, it's unlikely I would find myself writing this article today. Instead, I might still be working as an accountant!

Computers are fun. A modem and Prestel add to the enjoyment in what is fast becoming the global village. A cliche perhaps, but the reality is incredible.

ACU

Double Trouble



By KEN GOODMAN

Since the early days of home computing there have been a number of games which persist in surviving in one disguise or another. Such as "dodge the shower of nasties" or "bomb the city flat" or "bat the beknighted ball". Then there are the various board games, or grid games, like "find the submarine" or "match the colours" and "reversi".

No doubt we've all had a go at these at some time or another, but here's something new. Have you ever tried to handle two of these old crocks at the same time? Now's your chance!

Here's a straightforward, easy to understand, Basic program which lets you play "fill the grid with colours" or "dodge the nasties" one game at a time but also gives you the option of running both together. You should find this intriguing since the grid must be filled with different non-adjacent colour blocks before either the time runs out or your lives are lost in the other game.

The listing is printed in sections with titles to make the structure clear but here, in addition, is a summary.

100-220	Sets the variables and prints the instructions.
260-340	Choice of three games.
380-460	Draws the screen layout.
500-710	Controls the progress of game 1.
750-910	Ditto for game 2.
950-1110	Ditto for game 3.
1150-1280	Running sequence for game 1.
1320-1400	Ditto for game 2.
1440	Delay routine.
1480-1510	Interrupt subroutine to print time.
1550-1610	Draws the grid for game 1.
1650-1690	Checks the grid in game 1 for adjacent colours.
1730-1750	Prints the flashing marker for game 1.
1790-1810	Prints a colour block for game 1.
1850	End-of-game sound.

Notes

If you wish to alter the degree of difficulty in game 1, increase or decrease the value of tt in line 500. This is the total length of time allowable in which to complete the grid.

To decrease the number of nasties in game 2, reduce the figure 0.5 in line 1360 or remove the line altogether. To alter the number of lives permitted, change the value of lv in line 760.

Main Variables

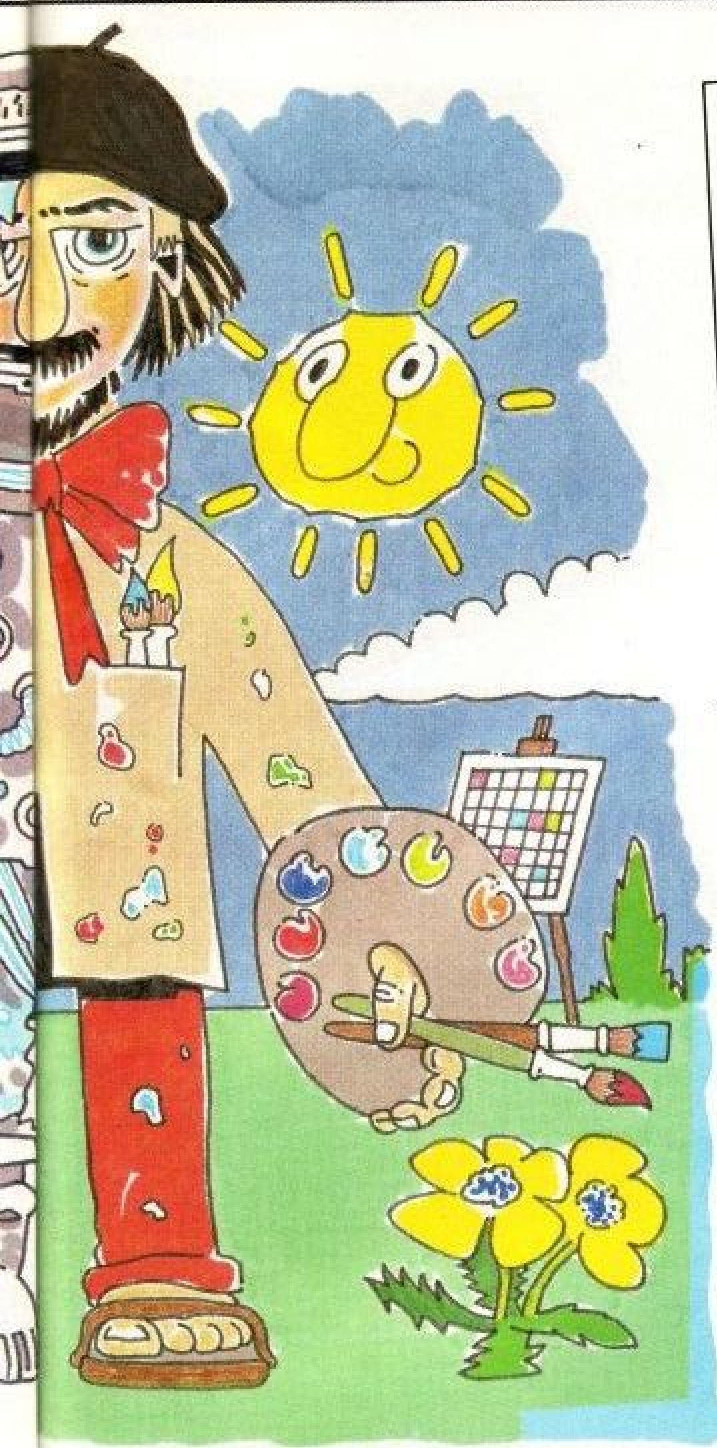
Game 1

grid(n)	Registers the condition of each grid cell.
tt	Time left.
fail	Adjacent-colour flag.
tally	Number of cells filled.
rxp,ryp	
blockx	Coordinates for printing colour blocks.
blocky	
rx,ry	Random coordinates for nasties.
cell	Grid cell number calculated from coordinates.
cbn	Block colour number chosen at random.
set	Flag set when block is inserted into grid.

Game 2

manx,many	Coordinates of players token.
msc	Max score.
sc	Players score.
lv	Lives left.

```
10 '                    DOUBLE TROUBLE
20 '
30 '                    By Ken Goodman
40 '
50 '
60 '
70 '
100 ' Starters
110 '
120 CALL &BC02:manx=5:many=12:DIM grid(3
    5)
130 SYMBOL 240,129,102,60,255,90,255,129
    ,231
140 SYMBOL 241,60,126,219,231,255,146,21
    9
150 SYMBOL 242,60,60,24,255,24,60,66,66
160 MODE 1:PAPER 2:CLS:PAPER 0:WINDOW 2,
    39,2,24:CLS
170 LOCATE 13,2:PRINT"DOUBLE TROUBLE"
180 LOCATE 3,4:PRINT"GAME 1 - Try to fil
    l the grid":LOCATE 12,6:PRINT"Key Z
    to place a colour"
190 LOCATE 3,9:PRINT"GAME 2 - Dodge the
    Nasties":LOCATE 12,11:PRINT"Keys / L
    EFT    RIGHT \"
200 LOCATE 3,14:PRINT"GAME 3 - Try to fi
    nish Game 1 before";:LOCATE 12,16:PR
    INT"the man dies in Game 2"
```



```
210 LOCATE 12,20:PRINT"PRESS SPACE"
220 WHILE INKEY$="":WEND
230 '
240 ' Options
250 '
260 MODE 1:INK 0,13:PAPER 0:CLS:LOCATE 6
    ,6
270 WHILE INKEY$<>"":WEND
280 PRINT"WHICH GAME ?":LOCATE 6,9
290 PRINT"1 - Game 1 only":LOCATE 6,11
300 PRINT"2 - Game 2 only":LOCATE 6,13
310 PRINT"3 - Games 1 & 2 together":LOCA
    TE 6,15
320 PRINT"4 - End program"
330 a$=INKEY$:IF a$="" THEN 330
340 IF a$<"1" OR a$>"3" THEN CLS:END
350 '
360 ' Set the screen
370 '
380 MODE 0:INK 9,11:INK 10,17:INK 11,13
390 BORDER 13:PAPER 11:CLS
400 WINDOW#1,2,8,2,18:PAPER#1,5:CLS#1
410 WINDOW#2,10,19,2,18:PAPER #2,10:CLS#
    2
420 WINDOW#3,2,19,20,24:PAPER#3,13:CLS#3
430 MOVE 16,392:DRAW 624,392,2:DRAW 624,
    8
440 DRAW 16,8:DRAW 16,392:MOVE 16,104
450 DRAW 624,104:MOVE 272,392:DRAW 272,1
    04
460 ON VAL(a$) GOTO 500,750,950
470 '
480 ' Control Game 1
490 '
500 tt=40:RANDOMIZE TIME:IF a$="3" THEN
    540
510 PEN #3,5:LOCATE #3,2,2:PRINT#3,"TIME
    "
520 WHILE INKEY$<>"":WEND
530 PEN #2,3:LOCATE #2,3,7:PRINT#2,"GAME
     1"
540 FOR i=1 TO 35:grid(i)=0:NEXT
550 GOSUB 1550
560 RESTORE:FOR i=1 TO 7:READ n:da(i)=n:
    NEXT
570 DATA 3,1,6,12,4,10,2
580 fail=0:tally=0:IF a$="3" THEN RETURN
590 EVERY 50 GOSUB 1480:WHILE NOT fail A
    ND tally<15 AND tt>0
600 GOSUB 1150:WEND:zz=REMAIN(0):GOSUB 1
    850
610 GOSUB 1550
620 IF a$="3" THEN RETURN
630 IF tt<=0 THEN LOCATE #3,9,3:PRINT#3,
    "Time's up":GOTO 660
640 IF fail THEN LOCATE #3,10,2:PRINT#3,
    "Colours":LOCATE #3,10,4:PRINT#3,"ad
    jacent":GOTO 660
650 IF tally=15 THEN LOCATE #3,8,3:PRINT
    #3,"OK You win
660 dl=3500:GOSUB 1440:CLS#3
670 LOCATE #3,1,2:PRINT#3,"Type M for mo
    re"
680 LOCATE #3,1,4:PRINT#3,"or C for a ch
    ange"
690 WHILE INKEY$<>"":WEND
700 aa$=INKEY$:IF aa$="" THEN 700
710 aa$=UPPER$(aa$):IF aa$="M" THEN CLS#
    1:CLS#3:GOTO 500 ELSE GOTO 260
720 '
730 ' Control Game 2
740 '
750 msc=0
760 lv=10:sc=0
770 IF a$<>"3" THEN PEN #1,4:LOCATE #1,2
    ,5:PRINT#1,"GAME":LOCATE #1,4,8:PRIN
    T#1,"2":LOCATE #1,4,8:PRINT#1,"2"
780 PEN #3,6:LOCATE #3,2,3:PRINT#3,"LIVE
    S "STRING$(lv,242)
790 IF a$="3" THEN RETURN
800 GOSUB 1320:IF lv=0 THEN 830
810 IF a$="3" THEN RETURN
820 dl=15:GOSUB 1440:sc=sc+1:GOTO 800
830 GOSUB 1850:IF msc<sc THEN msc=sc
840 CLS#3:LOCATE #3,2,2:PRINT#3,"Your Sc
    ore"sc
850 LOCATE #3,2,4:PRINT#3,"Max. Score"ms
    c
860 dl=3500:GOSUB 1440:CLS#3
870 LOCATE #3,1,2:PRINT#3,"Type M for mo
    re"
880 PRINT#3:LOCATE #3,1,4:PRINT#3,"or C
    for a change."
890 WHILE INKEY$<>"":WEND
900 a$=INKEY$:IF a$="" THEN 900
910 a$=UPPER$(a$):IF a$="M" THEN CLS#2:C
    LS#3:GOTO 760 ELSE GOTO 260
920 '
930 ' Control Game 3
940 '
950 EVERY 50,1 GOSUB 1480
960 EVERY 20 GOSUB 1320
970 GOSUB 500:lv=10:tt=50
980 PEN #3,5:LOCATE #3,2,2:PRINT#3,"TIME
    ":LOCATE #3,12,2:PRINT#3,"LIVES"
990 WHILE NOT fail AND tally<15 AND tt>0
     AND lv>0
1000 GOSUB 1150:LOCATE #3,13,4:PRINT#3,"
     ":LOCATE #3,13,4:PRINT#3,lv
1010 WEND:zz=REMAIN(0):zz=REMAIN(1):GOSU
     B 1550:GOSUB 1850
1020 CLS#3:IF tt<=0 THEN LOCATE #3,9,3:P
     RINT#3,"Time's up":GOTO 1060
1030 IF fail THEN LOCATE #3,10,2:PRINT#3
     ,"Colours":LOCATE #3,10,4:PRINT#3,"
     adjacent":GOTO 1060
1040 IF tally=15 THEN LOCATE #3,8,3:PRIN
     T#3,"OK You win":GOTO 1060
1050 IF lv<1 THEN LOCATE #3,2,3:PRINT#3,
     "Your man is dead"
1060 dl=3500:GOSUB 1440:CLS#3
1070 LOCATE #3,1,2:PRINT#3,"Type M for m
     ore"
1080 LOCATE #3,1,4:PRINT#3,"or C for a c
     hange"
1090 WHILE INKEY$<>"":WEND
1100 aa$=INKEY$:IF aa$="" THEN 1100
1110 aa$=UPPER$(aa$):IF aa$="M" THEN a$=
     "3":CLS#1:CLS#3:GOTO 950 ELSE GOTO
     260
1120 '
1130 ' Run game 1
1140 '
1150 rx=(INT(RND*3)+1):rxp=rx*2-1
1160 ry=(INT(RND*5)+1):ryp=ry*2
1170 cell=5*(ry-1)+rx+6
1180 IF grid(cell) THEN 1150
1190 GOSUB 1730
1200 cbn=INT(RND*7)+1:blockx=3:blocky=14
     :PEN #1,da(cbn):GOSUB 1790
1210 GOSUB 1550
1220 IF a$="3" THEN nn=600 ELSE nn=250
1230 pause=INT(TIME/nn):set=0:WHILE TIME
     /nn<pause+2
1240 IF NOT INKEY(71) THEN blockx=rxp:bl
     ocky=ryp:PEN #1,da(cbn):GOSUB 1790:
     GOSUB 1550:grid(cell)=cbn:GOSUB 165
     0:tally=tally+1:set=-1:pause=tt+3
1250 WEND:WHILE INKEY$<>"":WEND
1260 IF NOT set THEN blockx=rxp:blocky=r
     yp:PEN #1,5:GOSUB 1790
1270 blockx=3:blocky=14:PEN #1,5:GOSUB 1
     790
1280 set=0:RETURN
1290 '
1300 ' Run Game 2
1310 '
1320 LOCATE#2,manx,many:PEN #2,10:PRINT#
     2,CHR$(143)
1330 manx=manx+(INKEY(30)=0)-(INKEY(22)=
     0)
1340 IF manx<1 THEN manx=1 ELSE IF manx>
     10 THEN manx=10
1350 PEN#2,5:LOCATE#2,INT(RND*10)+1,1:PR
     INT#2,CHR$(240)
1360 IF RND>0.5 THEN PEN #2,9:LOCATE#2,I
     NT(RND*10)+1,1:PRINT#2,CHR$(241)
1370 PRINT#2,CHR$(30);CHR$(11);CHR$(11);
1380 LOCATE#2,manx,many:PEN#2,3:PRINT#2,
     CHR$(242)
1390 IF TEST (256+32*manx,210)<>10 THEN
     PRINT CHR$(7);:LOCATE #3,7+lv,3:PRI
     NT#3," ":lv=lv-1
1400 RETURN
1410 '
1420 ' Delay
1430 '
1440 FOR hold=1 TO dl:NEXT:RETURN
1450 '
1460 ' Interrupt
1470 '
1480 WHILE INKEY$<>"":WEND
1490 LOCATE #3,2,4:PRINT#3,SPC(4)
1500 LOCATE #3,2,4:PRINT#3,tt
1510 tt=tt-1:RETURN
1520 '
1530 ' Grid for Game 1
1540 '
1550 DI:FOR xx=32 TO 224 STEP 64
1560 MOVE xx,208:DRAW xx,368,4:NEXT
1570 FOR yy=208 TO 368 STEP 32
1580 MOVE 32,yy:DRAW 224,yy:NEXT
1590 MOVE 94,178:DRAW 162,178:DRAW 162,1
     42
1600 DRAW 94,142:DRAW 94,178
1610 EI:RETURN
1620 '
1630 ' Colour check - Game 1
1640 '
1650 n=cell-6:FOR j=1 TO 2:FOR i=n TO n+
     2
1660 IF grid(i)=grid(cell) THEN fail=-1
1670 NEXT:n=cell+4:NEXT
1680 IF grid(cell-1)=grid(cell) OR grid(
     cell+1)=grid(cell) THEN fail=-1
1690 RETURN
1700 '
1710 ' Print flashing marker
1720 '
1730 LOCATE #1,rxp,ryp:PEN #1,14:PRINT#1
     ,CHR$(144)CHR$(144)
1740 LOCATE #1,rxp,ryp+1:PRINT#1,CHR$(14
     4)CHR$(144)
1750 RETURN
1760 '
1770 ' Print colour block
1780 '
1790 LOCATE #1,blockx,blocky:PRINT#1,CHR
     $(143)CHR$(143)
1800 LOCATE #1,blockx,blocky+1:PRINT#1,C
     HR$(143)CHR$(143)
1810 RETURN
1820 '
1830 'End-of-game noise
1840 '
1850 FOR i=100 TO 400 STEP 5:SOUND 1,i,1
     ,15:NEXT:RETURN
```

TRACKER by Union Software

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out of the Ice Age

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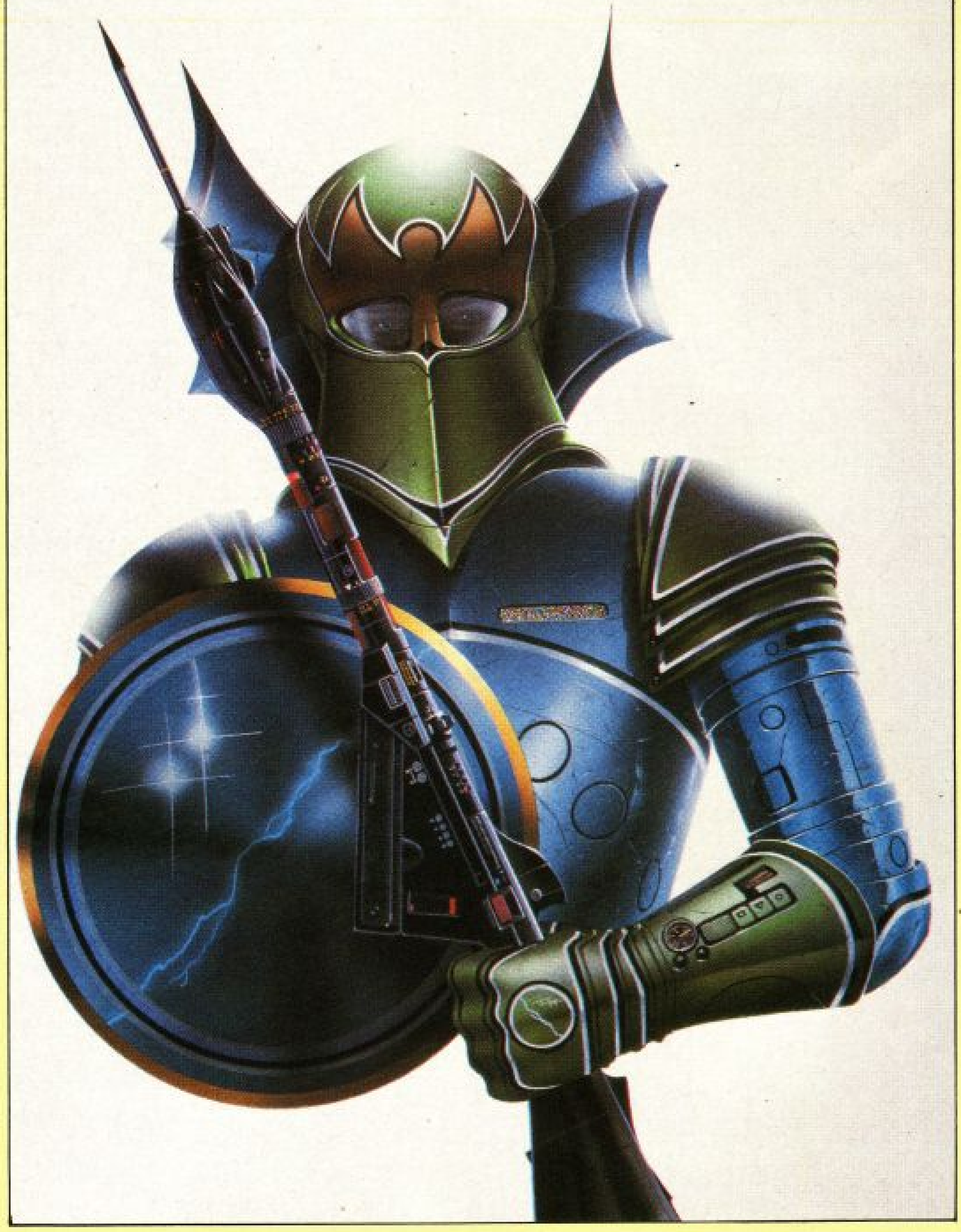
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KING COMBAT



Which game offers the most in hand to hand combat? Jim Taylor, armed only with a Quickshot II, does battle.

If there's one thing people never tire of in their computer games it's good, old-fashioned honest down-to-earth violence.

Cute arcade-adventures with twee characters and witty scenarios may come and go, but the game where you can take out your aggression on a load of old pixels will be with us for ever.

It may be a sad comment on human nature – but I'm here today, brothers and sisters not to give you a homily but to tell you just where you can get the best fix of mega-mayhem for your Amstrad.

There are two main strands to the violent games industry. On my left ladies and gentlemen, we have the representatives of the Marquess of Queensberry, exponents of the noble art of pugilism. In other words boxing games.

On my right, originally fighting out of the mystic orient but now more or less naturalised residents of the West, we have the karate games.

Somewhere in the middle we have the rest – those games which don't fit neatly in to any particular category but which still give you the necessary dose of action.

Oriental Combat

There seems to be no end to the number of games based on the martial arts. Just when you think you've had enough double somersaulting and high-kicking to last you a lifetime, out comes another game with just enough originality to tempt you again.

Of course all of these games have to measure themselves against the high standards set by the first of chop-em-ups – The Way of the Exploding Fist.

The Way of the Exploding Fist
– Melbourne House

It was the first, but is it still the best? Way back in the summer of 1985 it arrived like a breath of fresh air – or a stiff jab in the bread-basket – on the Amstrad games scene.

We went bananas over it. But if you can remember that far back you'll realise that there wasn't an awful lot of competition around. Has Fist stood the test of time?

I think it has. Few of its challengers come anywhere near it for sheer rib-cracking action, nimbleness of animation or strength of addiction.

It's a fairly simple idea – you take on and try to beat a number of opponents in the ancient art of karate. You can execute 16 different movements from a simple punch to a tricky high back kick.

The beauty of Fist is that it's a simple business to get started and enjoy yourself, but that making progress against the later fighters requires a considerable degree of skill with the joystick.

Practice certainly pays off. There can be few more satisfying moments in games than landing a perfectly timed flying kick and laying your opponent flat out.

Unfortunately before you get to that stage you'll have to suffer many a savage blow to many a sensitive spot of your anatomy.

The other main attraction of Fist is the two player option. Although this means that one player has to use the keyboard the fun is still immense.

The representation and animation of the fighters in Fist are superb. But criticisms were made on its release by those who compared it to the Commodore 64 version – they said the background graphics were dull and the sound appalling.

At the time I thought these people were being churlish killjoys – now I'm inclined



The Way of the Exploding Fist: Ouch! Another blow shatters another bone. How much can you take?

to think that Melbourne House didn't give as much attention to the frills as it might have done.

However the sound still recreates some suitably unpleasant physical contact noises and the background is pretty enough. Pity it's always the same. What's really important though is the gameplay, and in my book Fist still takes some beating.

Yie Ar Kung Fu – *Imagine*

Although Yakf only offers you 10 moves – as opposed to Fist's 16 – it provides elements that make it a very tempting alternative if you're determined not to over load your software shelves with the martial arts.

For a start, you're up against eight different opponents. As if that wasn't enough each one of them has a different style and uses a different oriental



Yie Ar Kung Fu: Oolong takes on another oriental baddy

weapon. And you get two backgrounds – temple and mountain range – both of them very attractive indeed.

Your opponents include Bucha, a bald blubberbelly with a penchant for nose dives; Star, with his evil oriental projectiles; Nuncha, who menacingly twirls two clubs joined by a chain. Other nasties use swords, clubs, shields and assorted offensive weapons.

So the action is pretty diverse and makes great demands on you as you take the role of Oolong. If I find it hard to be as enthusiastic about Yakf as about Fist it's not on account of the graphics or sound, which are equal if not superior to Melbourne House's offering.

It's more because Yakf just seems to lack that sense of real combat that can have you staggering away from the screen wondering if you might not really have a cracked rib or two.

Sai Combat – *Mirrorsoft*

Sai is a means of combat in which body and weapon are used as one. In this case you use a stick – or bo – to do harm to your opponent.

Both fighters on screen sport natty headbands around their balding pates and are observed by a pair of decrepit old Sai masters.

The state of your energy, or Chi, is



Sai Combat: Grab that bo and give it some stick

represented by the colour of a dragon's head under your fighter – if it starts to go green you're in trouble.

As in Fist you are able to use 16 movements to try and beat your opponents. What makes Sai Combat smarter than the average karate game is the element of the weapons. Somersaulting with a stick is one thing; knowing what to do with it once you've landed is another.

The different levels of the game take place against a variety of pretty backgrounds as you rise through the Dan levels. As the sticks and fighters whirl through the air they make an impressively and fearsome whooshing noise.

The game begins fairly gently and you shouldn't have too much trouble disposing of the first opponent. However the second one is an altogether tougher cookie and will rapidly bring you down to earth in the most painful of ways – more likely than not with a quick poke of his bo in your eye.

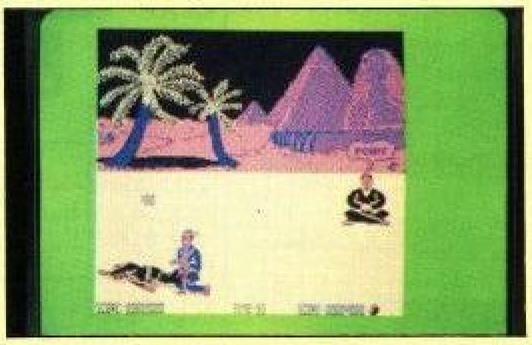
Sai Combat's mixture of excellent graphics, animation and a gameplan with a touch of originality make it a very desirable fighting game. Now if someone could do a version where the Sai chaps take on the choppers from Fist . . .

International Karate – *Endurance*

Endurance has rather set itself up with its motto – "Perfection is the only acceptable standard". Needless to say, this game falls well short.

Not that it's bad – far from it. It's a workmanlike job, but just lacks that touch of class to put it up with the leaders in takeaway martial arts.

You get the usual two combatants, but they're both rather small and lacking in



International Karate: Another exotic backdrop to the crash, bang and wallop

detail. You also get 16 movements, but I have to admit that I found them less than simple to implement – with the result that I often got a faceful of flying kick.

The international element comes in with the backgrounds – if you defeat one fighter you jet off round the world to take on the next. Why is anyone's guess, but there you have it.

The result is that you get six different backgrounds – Sydney Harbour, the Pyramids and so on. Pretty though these are, they remind me of the illustrations in a graphic adventure.

Sound effects are strange – something like listening to a sea shell. But the game's biggest problems are that the fighters are too small and the action not violent enough.

The Way of the Tiger – *Gremlin Graphics*



The Way of the Tiger: Trigeminal scrolling and excellent animation, but what about the blood and guts?

As befits a game that features trigeminal scrolling Way of the Tiger comes in three sections. So it's not so much a karate game – although it includes that – as a triple combat game. What you get for your cash is unarmed combat, pole fighting and sword fighting. The action takes place on a screen split in to three separately scrolling areas – hence the trigeminal business.

This scrolling gives a good impression of movement, matched in quality by the rest of the graphics and the animation.

As the heroic ninja you have to take on numerous opponents in your fight against evil. In the first section – unarmed combat – you could come up against anything from a nasty goblin to a tough old troll.

Success in this section takes you on to the next stage – pole fighting. The scrap takes place on a log over a river and defeat means taking an early bath.

The next stage is sword fighting, which again has a superb background. The scrapping here tends to be tougher than in the two previous sections.

Possible movements are limited to about 10 in the game, and essentially the same ones are used in all sections.

While the scrolling, background graphics and animation are all excellent there's no overwhelming sensation of

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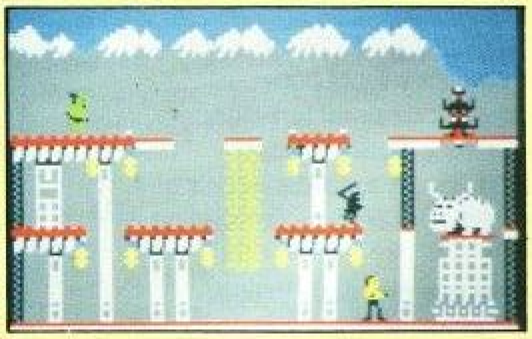
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being involved in a fight to the death. Tiger seems to lack something of the excitement of the best on-screen scraps.

Bruce Lee – *US Gold*

The game that's named after the man who might be said to have started – or be to blame for – the whole martial arts craze.

It's a strange package and strictly speaking doesn't belong in this section



Bruce Lee: Green Yamo's got a serious weight problem – but he's still causing Brucie some tricky problems

since it's not solely a combat game. However I can't think of anywhere else to put it, so here it is.

It is a successful combination of combat and platform game. You, as Brucie, run around trying to collect lanterns, unlock doors and claim the evil wizard's fortune.

Trying to stop you is the Green Yamo – an overweight lump of green fluorescence – and his sidekick the ninja.

So as you rush up, down and around the screen you regularly have to stop for a spot of full body contact with these two. Since the characters are pretty small and there's lots else going on the combat isn't as complete as the specialist games. But it's still good fun, and the other elements make the whole thing a very enjoyable game.

Boxing

"What's karate got that boxing hasn't?" you might ask. The answer is vertical action; all those leaps and somersaults and high kicks.

Boxing is essentially back and forth – which is why there needs to be something extra to make it really suitable for a computer game.

Barry McGuigan's World Championship Boxing – *Activision*

Bazza may think of himself more as a chat show host than a boxer these days, but his program is still the best boxing game around. It has excellent graphics and fight action added to a genuinely intriguing strategy element.

You begin by creating your boxer out of the available characteristics. So you can, for instance, choose from styles such as Slugger – you like to get in close for a bit of rough house – or Dancer – where you're one of those elegant movers who rarely gets within an arm's length of his opponent.

Before you make it in to the ring you have to spend some time in training camp, working up a sweat on the bags, sparring or running 10 miles at five in the morning.

If you've done the business then you should have a chance when you take on your foes, the first of whom is likely to be the tough but lumbering Cannonball Corby – some joke about Commodore?

Since the boxers move automatically according to the chosen style you can concentrate on landing some good punches.

The program is written with a deal of thought and skill. Graphically it packs a reasonable punch, but what makes it the number one is its excellent blend of strategy and violence.

Frank Bruno's Boxing – *Elite*

Until Barry burst through the ropes this was the heavyweight among boxing programs. It's still good – graphics and action is exciting – but it now seems to lack a little of the skill element.

3D Boxing – *Amsoft*
Rocco – *Gremlin*



3D Boxing: The crowd bays for action – but they won't get much

A couple of contenders who never really made it to the top rank – probably because their trainers never quite thought out the strategy properly. Its 3D's graphics are not very impressive, and get less so when the action starts. You never seem to have any close control over what the fighter is doing and pretty quickly you don't really care.

Rocco does have impressive graphics – very detailed indeed. Unfortunately all four opponents look exactly the same and share the same fighting style.

The other contenders

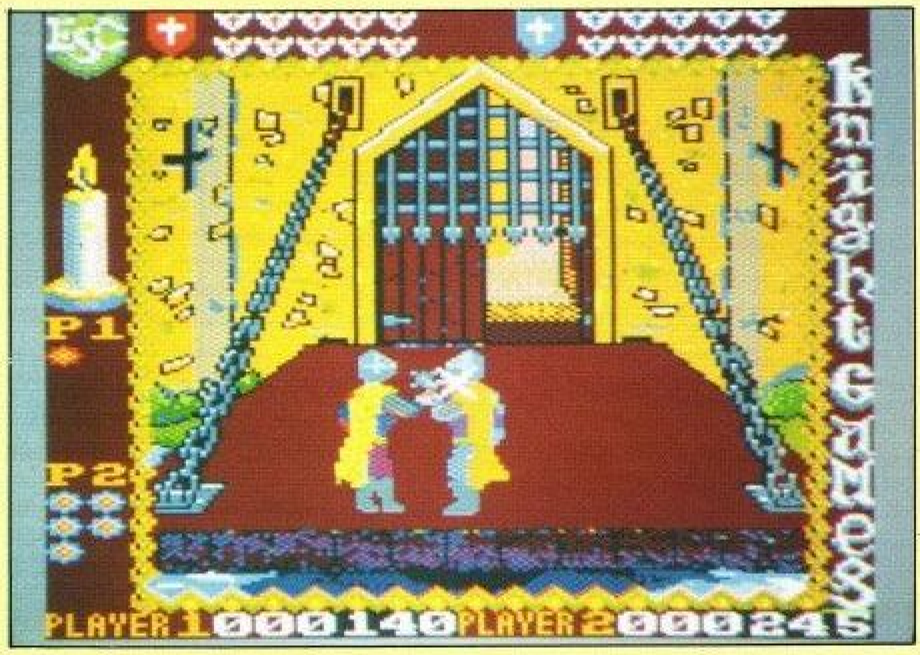
Knight Games – *English Software*

This medieval slice-em-up features some of the most impressive background graphics I've ever seen on the Amstrad, as well as the funkiest music since Blondel was serenading Richard the Lionheart.

It's also got eight events, six of which involve battering away at an opponent. You get two sword fights, quarterstaff, pikestaff, ball and chain, axeman.

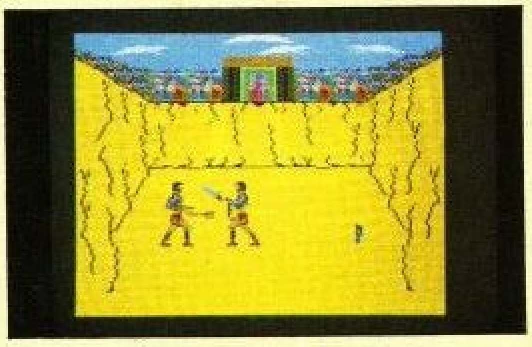
Clanking around in his armour the player just tries to hammer his opponent – it seemed to me that there was neither much subtlety in the gameplay or variety between the different events.

In fact the two most enjoyable sections of the program are, unfortunately the least violent – archery and crossbow, in which you have to aim at targets spinning in the distance.



Knight Games: Clanking around in their thermal armour, the combatants cut large chunks out of each other

Gladiator – *Domark*



Gladiator: Cut and thrust in the Roman arena – but it could be before you earn your freedom

It's hard to find anything good to say about this. The graphics are dismally sketchy, the action is unclear and the sound a collection of beeps.

The idea is to fight your way to freedom by winning gladiatorial combat. You have a choice of 45 weapons – which sounds fab, but isn't; the dozen or so swords, for instance, are not terribly different. The best combination of weapons is two tridents.

In the arena, under the Emperor's gaze, you scrap it out. But the action is unclear and you'll find it very hard indeed to beat the computer.

Fighting Warrior – *Melbourne House*

Excellent graphics and animation, atmospheric soundtrack and the most disgusting slicing, squelching and spitting noises to be found in a game. But, I'm afraid, rather tedious when it comes to the fighting.

As you make your way from left to right across the screen taking on a variety of bizarre creatures, the action becomes very repetitive. You only have a sword to fight with and four movements of it.

In the end Fighting Warrior disappoints. At first you think it's going to be the combat game to end them all, but ultimately it's a bore.



Fighting Warrior: Slice and squelch while the pyramids scroll by

Rock 'n Wrestle – *Melbourne House*



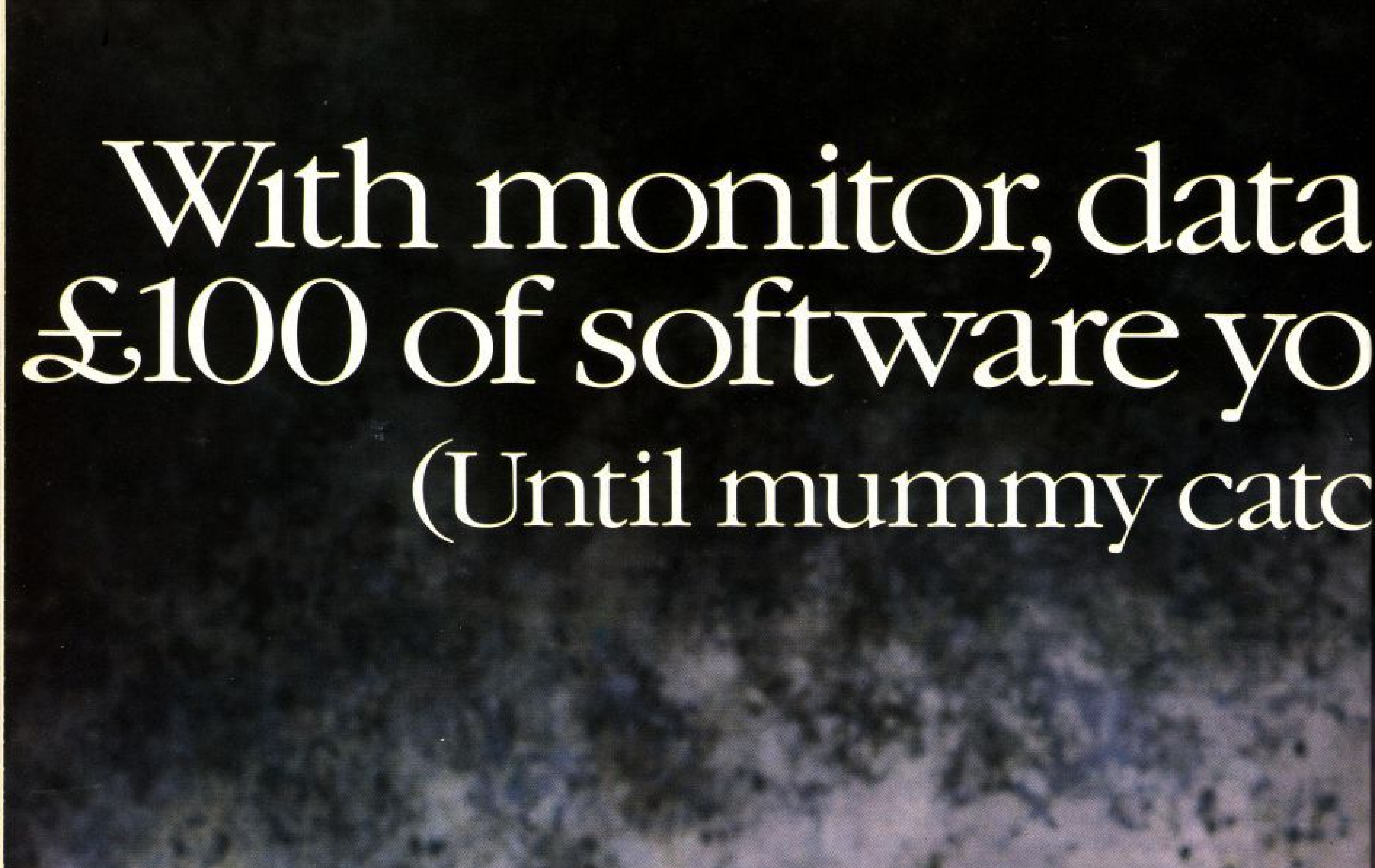
Rock n Wrestle: The snappiest dressers in fighting games grapple away

A nice idea, this one. And it's one of the few combat games to pull off a true 3D effect. Not to mention the 25 different wrestling moves.

Problem is that it's terribly difficult to perform these moves, with the 3D only adding to the confusion.

I'd recommend this only to dedicated grapple fans who know their wrestling, can cope with the garishly colourful costumes and don't mind suffering the odd body slam.

ACU



With the Amstrad 464 home computer the fun starts as soon as you get it home.

Because unlike many other home computers the 464 comes complete with its own green screen or full colour monitor.

It also comes with a convenient built-in datacorder.

And you get £100 worth of software with games like Harrier Attack and Sultan's Maze. Not to mention Oh Mummy.

64K of RAM means you have plenty of memory to play with. And there are over 200 Amstrad games you can play, many exclusive to Amstrad.

But games are only half the fun on the 464.

The kids can learn spelling and arithmetic with software like Wordhang and Happy Numbers.

Whilst adults will love the way that it helps around the house with budgeting and accounts.





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OH MUMMY
"C" TO CONTINUE

GALLUP SOFTWARE POLL

Position	Title	Publisher	Comment	Last month	Market strength
1	**Thrust**	*Firebird*	Deservedly number 1. Simple and clever space game. A cross between Asteroids and Lunar Lander.	10	100
2	**Speed King**	*Mastertronic*	Large sprites and high speed action in an excellent motorcycle racing game.	ne	90
3	**Ninja Master**	*Firebird*	Simple four part test of Japanese fighting skills.	ne	55
4	**Kane**	*Mastertronic*	High quality Wild West action, birdies and baddies to shoot, trains to catch.	1	44
5	**Harvey Headbanger**	*Firebird*	Jolly arcade game which demands quick wits and fast responses. Best for two players	2	41
6	**Ghosts and Goblins**	*Elite*	Faithful conversion of the coin-op original. Difficult but addictive. Great fun once mastered.	3	32
7	**Storm**	*Mastertronic*	Gauntlet-style view from above arcade game. Very addictive with a huge map.	7	29
8	**Green Beret**	*Imagine*	Blood and thunder coin-op convert. Take on a whole army with only a knife and the occasional flame thrower.	5	24
9	**Knight Games**	*English*	Middle ages combat game. Bash the hell out of a friend while wearing armour.	17	23
10	**Winter Games**	*Epyx/US Gold*	It's snow joke trying to control your skis as you aim for the next Olympic record.	16	22
11	**Molecule Man**	*Mastertronic*	Have a ball rolling around a 3D maze, or build your own with the construction set.	4	21
12	**Elite**	*Firebird*	The famous space trading game with plenty of mid-flight action. Highly addictive and an essential purchase.	5	21
13	**Knight Tyme**	*Mastertronic*	Once a knight – now a spaceman. Clever menu-driven arcventure. Cute characters and a wry sense of humour.	8	20
14	**Jack the Nipper**	*Gremlin*	Thrill to be three, scare the cat, break the computers and release the convicts. All in an afternoons naughtiness.	14	20
15	**Batman**	*Ocean*	Gotham City will never be the same unless you can rebuild the batcraft and rescue your friend who has been Robin-napped.	15	18
16	**Kung Fu Master**	*Data East/US Gold*	Now everybody's kung fu fighting. Run to the aid of the love of your life. You may need to beat up a few gaolers on the way.	11	17
17	**International Karate**	*System 3*	Latecomer to the oriental arena. Yet another way to let off steam as you do hand to hand combat in a distant land.	ne	17
18	**Speech**	*Superior*	Let your Arnold do the talking. Software which answers back, not a game but fun to play with.	ne	16
19	**Formula One Sim**	*Mastertronic*	The racing game which is stuck in the chart, by now everyone must have a copy – don't be left out.	20	16
20	**Stainless Steel**	*Mikrogen*	Ricky Steel makes Mad Max look like Mel Gibson (He does doesn't he), help him get to his air car and blast the baddies.	ne	15

Non-mover ▶ Up ▲ Down ▼ New entry ●

November 1986

Chart compiled by Gallup/MicroScope

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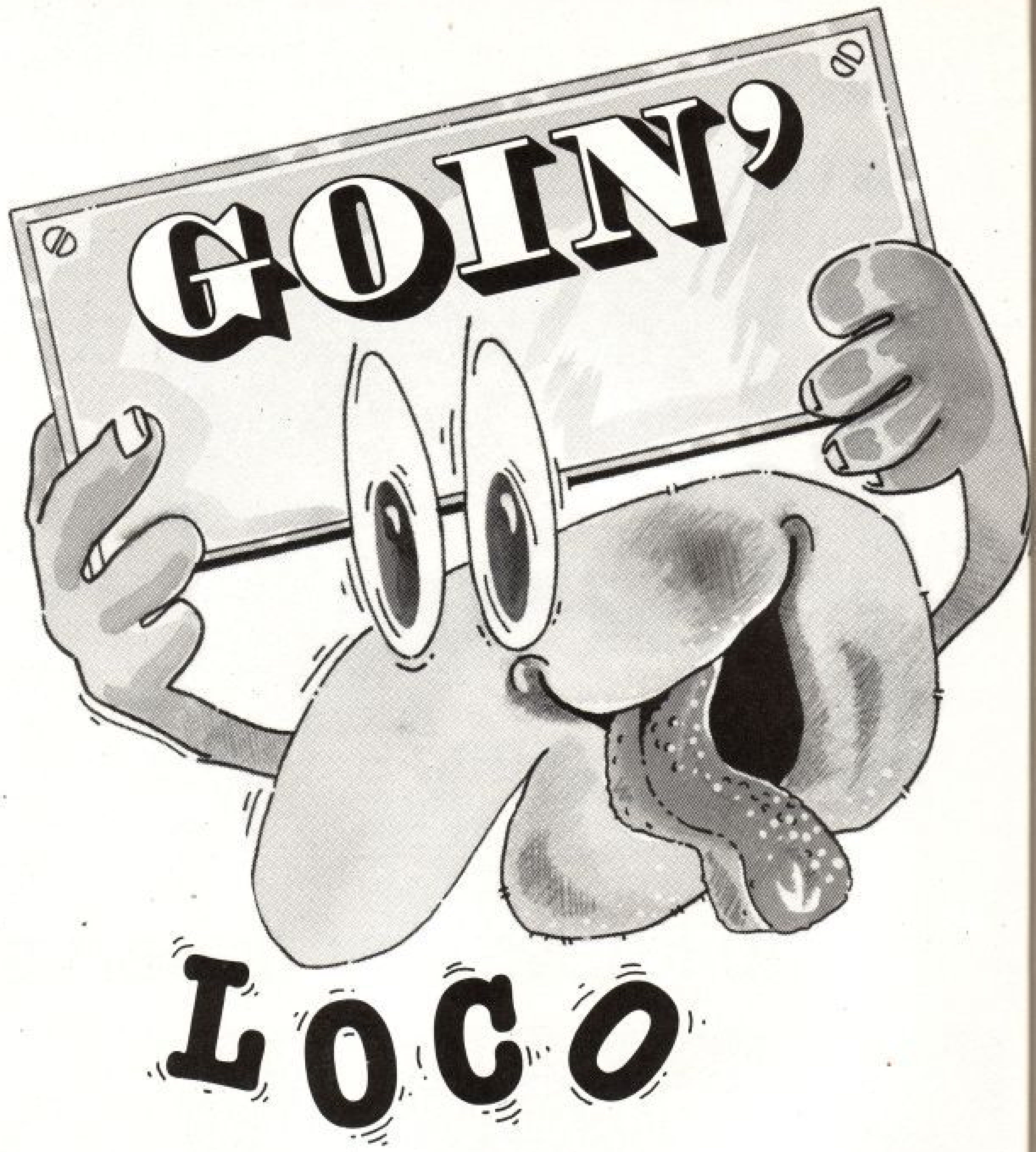
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Alexander Martin becomes graphically orientated

Well kiddies, this month we're all going to become graphic designers. No, not because they earn a lot of money. Nor because they get to wear trendy gear, well some of them. Because we're looking at graphics and the graphics commands in particular.

Most computers these days use the Cartesian coordinate system. This is a scheme devised by the French philosopher René Descartes (1596-1650). One day he was sitting in the bath (or was that the other guy?) thinking to himself "what can I do to really screw things up for everyone who wants to draw graphs on their personal computers in the 1980s?"

So he thought up this really brilliant idea where things were drawn on a grid. Any line drawn on it starts at a specific point which has a unique pair of numbers associated with it, called coordinates. Counting across the page gives you a number which you call the X coordinate, counting up the page gives you a number which you call the Y coordinate.

Why Y? Why not?

I expect René used the first two letters that came into his head. It has been a headache ever since, trying to remember which is across and which is up and down. It should be easy really. After all, X is a cross which means Y must be up and down.

With coordinates, the X always comes before the Y and when drawing graphs on paper you always move across the page and up, not up and across. "Think of a painter," my maths teacher always used to say, "he has to move his ladder across before climbing up it." I expect you've got little gems of useless crud imprinted on your brain too.

There is now an alternative to the Cartesian system. I don't know if there is a technical name for it, but it is commonly known as Turtle Graphics. This is the system used with the Logo language and is available with some versions of Pascal and under Basic 2 on the PC1512.

Rather than issuing commands such as "draw a line to the point 10 units across and 10 units up", Turtle Graphics uses commands "point in a direction, draw a line 10 units long". The 464 doesn't have any Turtle Graphics so unfortunately I can say no more about them.

Plonking dots

By now you should have grasped the fact that the graphics on the 464 are Cartesian. That is, they are used by specifying two coordinates, one X (across the screen) one Y (up and down).

There are three things that you can do. Plot a point – a dot plonked in the middle of the screen somewhere. Draw a line between two points. And move to a point, without leaving a trace on the screen.

This is a good point (no pun intended) to introduce the graphics cursor. The graphics cursor is a pair of numbers hidden inside the computer. The numbers are the coordinates where the last graphics command finished.

So if you've just drawn a line that finishes at 50,60 and you say Draw 60,70, there will be a line drawn between the two sets of coordinates and the graphics cursor will be moved to the new position.

Absolutely baffling

The commands that allow you to do this are Plot, Draw and Move. All three commands operate with absolute coordinates. Baffling? Absolutely. There are three more commands and these are Plotr, Drawr and Mover. Ir expectr you'ver noticedr somethingr aboutr theser. The R stands for relative and indeed these are all relatives of Plot and the other commands.

There are two sorts of command then, relative and absolute. The difference between them is the way in which the parameters to the command are used. Absolute commands move to a completely new position. Relative commands move to a position that is dependent on the old position.

A move to an absolute position is like a specific journey. You walk to the bakers. The final position that you end up in is important – well it is if you wanted to buy bread. On the other hand, the headlamps on a car shine relative to the car's motion. As the car moves the headlamps shine at the same distance from it.

To show that there is a marked difference between the two, here is a program that uses the same parameters, starting at the same place but showing quite different results.

```
10 MOVE 100,100 'standard starting posit
   ion
20 MOVE 40,40:DRAW 30,20
30 '
40 MOVE 100,100 'standard starting posit
   ion
50 MOVER 40,40:DRAWR 30,20
```

Absolute and relative commands are equally useful. One command can easily be produced from the other simply by adding offsets or bringing the graphics cursor back to the start.

Chunky pixels

The thing that I found most confusing about the Amstrad's graphics when I started using them was the way in which coordinates relate to pixels. In a word they don't. Because there are three different graphics modes the coordinate system is designed to operate with all three and produce the same result on all screens.

So if you draw a square 10 by 10 in one mode it will be printed as a square and not a rectangle in another. The only difference will be in the chunkiness of the pixels displayed on the screen. For each different mode, when a line is drawn from one set of coordinates to another, a calculation is made by the computer to find the pixels to switch on between the coordinates.

Other computers number each pixel with a coordinate. On the Amstrad, coordinates don't specify a particular pixel but a position on an unseen grid.

The following listing shows that different modes take differing amounts of time to finish the same program. Using a simple loop and both absolute and relative graphic commands the program draws a rectangle. Run this in all three screen modes. You will notice that there is a difference in the time taken to draw the block.

The difference is not that great between modes 0 and 1 but Mode 2 takes much less time. The Step command in the For Next loop moves the graphics cursor two pixels across in Mode 2, so only half as many lines are drawn. This probably accounts for the large difference. Take out the Step command and you will find that the speed difference is very small.

```
3 DEFINT a-z
5 t!=TIME
10 FOR x=10 TO 520 STEP 2
20 MOVE x,10:DRAWR 0,200
30 NEXT x
40 PRINT TIME-t!
```

Origin of the species

The place where the coordinates start, 0,0, is called the origin. Initially this is in the bottom left corner of the screen. If it was completely stuck it would be quite inconvenient. Especially when drawing circles, where using coordinates relative from the origin takes a great deal of effort out of the calculations. Usefully, the origin is mobile and it can be altered using the Origin command.

There are four additional parameters to the Origin command that allow you to define a graphics window. A further command, Clg, makes it possible to clear the graphics window to one of the available inks. This command in combination with Origin is very fast and can be used to produce a large filled block on the screen very quickly indeed. Origin, demonstrated in the short program below, takes coordinates and converts to the nearest screen byte.

```
10 MODE 0
20 FOR x=320 TO 1 STEP-30
30 y=y+40
40 ORIGIN 0,0,320-x,x+320,0,y
50 CLG i
60 i=i+1:i=i MOD 14
70 NEXT x
```

Create and display

Finally, here are two programs that you can type in and use. They perform separate functions. One allows you to create a data file of graphics information, the other allows you to then display the image you created in a number of different sizes.

The second program has been developed from the first so you will be able to edit a copy of the first to create the second. They do show that the fictitious

```
10 MODE 2
20 DEFINT a-z
30 OPENOUT "dum":MEMORY HIMEM-1:CLOSEOUT
40 ORIGIN 320,200
50 FOR n=1 TO 7:READ button(n):NEXT
60 DATA 0,2,8,1,9,47,18
70 DIM x(400),y(400),a(400): last=0:x(0)
   =0:y(0)=0:a(last)=-1
80 x=0:y=0:ox=x:oy=y:a=-1:MOVE x,y
90 PRINT CHR$(23)+CHR$(1)
100 '
110 GOSUB 260
120 LOCATE 1,25:PRINT USING "x: #### y:
    #### ";x,y;
130 IF a<0 THEN PRINT"MOVE "; ELSE PRINT
    "DRAW ";
140 IF a<0 THEN PLOT ox,oy:PLOT x,y :a(l
    ast)=a:x(last)=x:y(last)=y:GOTO 170
150 MOVE x(last),y(last):DRAW ox,oy
160 MOVE x(last),y(last):DRAW x,y
170 ox=x:oy=y
180 IF fire THEN GOSUB 220
190 GOTO 110
200 '
210 '
220 last=last+1:x(last)=x:y(last)=y:a(la
    st)=a:fire=0:PRINT CHR$(7);
230 RETURN
240 '
250 ' key reading routine
260 FOR n=1 TO 7
270 IF NOT(INKEY(button(n))) THEN ON n G
    OSUB 310,320,330,340,350,360,390
280 NEXT n
290 IF pr2 THEN pr2=0:GOTO 260
300 IF NOT(pr) THEN RETURN ELSE pr=0:GOT
    O 260
310 y=y+1:pr=-1:RETURN
320 y=y-1:pr=-1:RETURN
330 x=x-1:pr=-1:RETURN
340 x=x+1:pr=-1:RETURN
350 fire=-1:pr2=-1:RETURN
360 a=-a:RETURN
370 '
380 ' save the file
390 GOSUB 220
400 WHILE INKEY$<>"":WEND
410 LINE INPUT "Filename:";f$
420 IF f$=""THEN RETURN
430 OPENOUT f$
440 WRITE#9,last
450 FOR n=0 TO last
460  WRITE #9,x(n);y(n);a(n)
470 NEXT n
480 CLOSEOUT
490 RETURN
```

sheet of coordinates on which you are plotting extends beyond the edge of the screen.

When you have got them typed in, run program one. This uses yet another method of reading the keyboard. The cursor keys move a point or line about the screen. Pressing space toggles from Draw to Move.

So to draw a shape move to the first point, press Copy to fix it, press space to draw, move to the next point and press Copy again. You can have up to four hundred points defined, or to have more, change the Dim statement at the start. The shape that you draw is stored in a file and can be saved by pressing Enter.

The computer prompts you for a file name. It then saves the size of the file and a list containing the x,y coordinates and a number that indicates whether to draw to, or move to, the next point.

The second program works in a similar way. Press Enter to load a file. Use the cursor keys to move the centre of your shape about. Press Copy to draw your shape and press it again to erase it. The key . on the keypad will reduce the size of the shape and 0 will increase it.

The programs are not very sophisticated – they don't check for moving off the screen for example. You could easily expand them, combine them to create and manipulate images and put in extra features.

```
10 MODE 2
20 OPENOUT "dum":MEMORY HIMEM-1:CLOSEOUT
30 ORIGIN 320,200
40 DEFINT a-z
50 FOR n=1 TO 8:READ button(n):NEXT
60 DATA 0,2,8,1,9,7,18,15
70 DIM x(400),y(400),a(400)
80 x=3:y=2:s!=1
90 PRINT CHR$(23)+CHR$(1)
100 '
110 GOSUB 230
120 LOCATE 1,25:PRINT USING "x: #### y:
    #### scale: #####.### ";x,y,s!;
130 IF NOT fire THEN 110
140 FOR n=0 TO last
150 IF a(n)<0 THEN MOVE (x(n)+x)*s!,(y(n
    )+y)*s!:ELSE DRAW (x(n)+x)*s!,(y(n)+
    y)*s!
160 NEXT n
170 fire=0
180 GOTO 110
190 '
200 '
210 '
220 ' key reading routine
230 FOR n=1 TO 8
240 IF NOT(INKEY(button(n))) THEN ON n G
    OSUB 280,290,300,310,320,330,370,340
250 NEXT n
260 IF pr2 THEN pr2=0:GOTO 230
270 RETURN
280 y=y+1:pr=-1:RETURN
290 y=y-1:pr=-1:RETURN
300 x=x-1:pr=-1:RETURN
310 x=x+1:pr=-1:RETURN
320 fire=-1:pr2=-1:RETURN
330 s!=s!-0.1:RETURN
340 s!=s!+0.1:RETURN
350 '
360 ' load the file
370 WHILE INKEY$<>"":WEND
380 LINE INPUT "Filename:";f$
390 IF f$=""THEN RETURN
400 OPENIN  f$
410 INPUT#9,last
420 FOR n=0 TO last
430  INPUT#9,x(n),y(n),a(n)
440 NEXT n
450 CLOSEIN
460 RETURN
```

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MIKRO-GEN MASTERING THE MARKET

On a recent visit to sunny Berkshire Alexander Martin met the men and women behind one of Britain's longest lived software houses.

The history of the software industry, especially the games market, is littered with the remains of dead companies who for one reason or other have failed to make a go of it. Games are a sink or swim business where software houses regularly go under.

The average life of a software house seems to be measured in months rather than years. The exception to this rule is undoubtedly Mikro-Gen, one of the longest surviving games producers in the country. With a couple of recent hits and more games on the way, the company is revamping its low key image and going for a more modern and exciting style.

Mikro-Gen started way back in the good old days of the ZX81. Its first product was a chess game for that machine, at a time when few thought such a thing was possible. It was written by Andrew Laurie, one of the founding partners of Mikro-Gen.

Tapes were produced one at a time on a normal cassette recorder and sold through small ads in Computing Today and PCW. But Andrew rapidly got fed up with the manual duplication of the cassettes.

As Mike Meek, the other partner and now managing director of Mikro-Gen says: "Andrew was saying one night, 'I'm going to give this up, it's not worth the hassle', so I said 'I don't think you're doing it right'.

"And we talked, and what came out of that conversation was that I would take over the marketing and production of his program, while all he had to do was maintain it."

Duplication was changed to a large reel to reel tape recorder dumping to six Marantz cassette recorders. The expertise gained by doing it themselves paid off when they became the first ZX81 software supplier to W.H. Smith and the reliability of the cassettes clinched the deal.

They expanded the range of titles and



Frost Byte – one of many new Micro-Gen releases

Mike left his well paid full time job to run Mikro-Gen. Initially programming was done by outside contractors, but eventually the problems of managing program production and the rapidly expanding workload led to the freelancers being taken on full time.

Time to expand

The team has since expanded and now there is a sizeable programming staff. Cassettes are still duplicated by the company but now on professional duplicating machines. Folding the cassette inlays, labelling and packing are all done on the company's premises.

Initially Mikro-Gen had premises in the centre of Bracknell which were used as a shop as well as for the rest of the business. Recently production has moved to a medium sized industrial unit on a modern trading estate in Bracknell leaving the shop to carry on.

In a few short years Mikro-Gen has come a long way from its roots and as Mike points out, they were not the only ones to start a small way.

"Every company started in its front room. That's where this industry comes from. Now the market has more professional requirements.

"Regrettably there is an equal mix of marketing to quality of software. Quality ought to be the main factor and I have to say it isn't.

"I would rather see the software winning out at the end of the day, but I wouldn't like to see products not selling mainly because of lack of business expertise.

"Maybe marketing has the edge, because there have been some awful pieces of software coming on to the market – not mentioning any names but we all know them – and they've gone to number one!

"And in some cases these are products other companies have turned down. Just because the marketing conditions and hype were right they've become best-sellers.

"What worries me about this trade is that we don't promote ourselves very well, if at all. Compared with the record industry, which spends millions on promotion, the software trade does nothing – and yet we have 10 per cent of the market. If we want to increase that share we ought to be doing more.

"This trade owes its success to certain factors – one is undoubtedly Sinclair, another is Amstrad. But it's Alan Sugar and Clive. Very little is said about the product itself, it's always the companies that are hyped.

"I believe that the software houses are a major factor in making home computers successful. In the early days of our chess program people were seeing it at shows and saying 'can it do that?' – then going on to the Sinclair stand, buying a machine and coming back to buy the program.

Making a market

"Now that's making a market. I'm not so sure we're still attracting the same market but we should be, and we ought to be doing things to further the trade. Up to now everything that has happened has been haphazard."

We turned to the subject of hardware. "In general we've always wanted a machine with greater capability," continued Mike, "and because of that we've pushed existing equipment to the very limits.

"You have to develop techniques whereby game characters have faces – even when the resolution of the machine doesn't allow it. If the graphics designer is very clever, he can suggest some shadows and the brain will do the rest."

I asked Mike how he'd like to see

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hardware for home computers develop:

"I'd like to see the Amiga, or a similar machine, at two hundred pounds. And I'd like to see compact disc storage come into play. This trade has got an enormous way to go – we've hardly scratched the surface.

"The ZX80 was successful, even though you had to represent things with squares and in very low resolution. People enjoyed playing.

"A lot of people would turn their nose up at games but leisure time is a very important sector of the market. If it wasn't there wouldn't be an arcade industry, and you've only got to go into the West End to see how strong that is.

"I strongly believe that we are going the wrong way as far as software is concerned. People marketing arcade machines are now licensing them as games because the software is already successful. But there isn't the depth that everybody has been demanding for the last two years.

"We turned from producing very complex arcade adventures because we felt that most people get far more pleasure from software they can use straightaway.

Media influence

"To an extent reviewers in magazines have been guilty of misleading the market. I'm pretty sure that if we brought out a game similar to one on an arcade machine we would be criticised for lack of content. Reviewers can't say an arcade machine game lacks depth, because it already exists as a format. As the reviewers are the experts on the market we've always tried to produce software that is acceptable to them.

"But I'm increasingly aware that once a reviewer has held his job for a while he no longer represents the average buyer – he can't, he's seen far too much software and his appreciation has become far too sophisticated to represent the guy at street level.

"Reviewers hold a lot of power. If they say a game hasn't got content and is poor value, what do you do? Distributors will get software of that complexity, and selling for £8.95, appearing on a budget label.

"It cannot be done, with the amount of labour and programming skill that goes into the six months of development. The profit margin isn't there to produce a budget title."

Budget software

"Budget software seems to be improving in quality", I suggested.

"It is improving, because profit margins are getting tighter and eventually this will force some people out of that market place as they have to pay more for development", said Mike.

"Battle of the Planets is still the smoothest scrolling yet as far as 3D graphics are concerned, but it took a lot of time working that out. Of course, now it's been done, someone can hack the program and put those tables into a program very quickly.

"What takes the time is the actual development. It's a bit like your television going wrong and the repair guy coming out. He might spend two or three hours working on your set and eventually pull out and replace a capacitor.

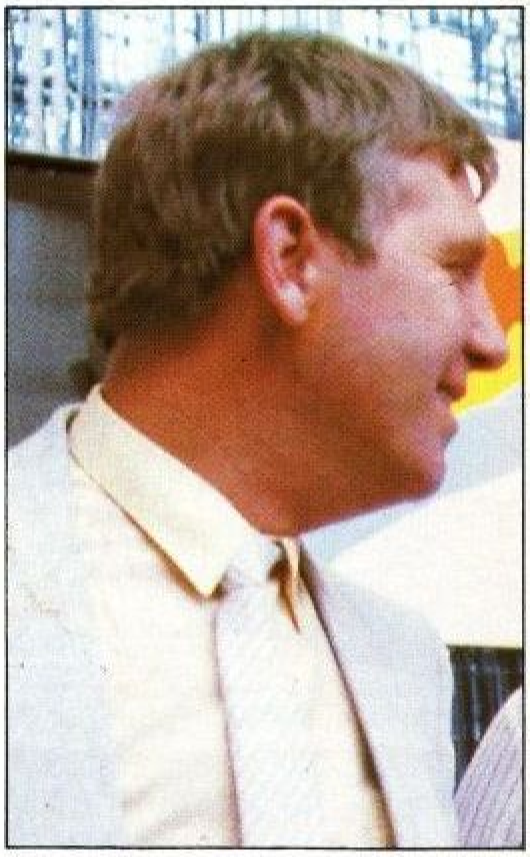
"You haven't just paid for the part, you've paid for that guy's time and skill. And when you pay your £8.95, you're paying for a program which will be that little bit better.

"Did you ever see Spectrum Starstrike II? Regrettably it didn't achieve the kind of success it deserved. The processor is working so much overtime you wouldn't believe it.

"Technically the game is brilliant. But how can you tell that to a guy who's just bought an Amstrad and seen all the other wonderful things that his machine can do? All he sees is a slight flicker that, at the end of the day, he might not like.

"It's not always possible to put over how technically good a program is – or maybe the user doesn't care."

"That's probably near the mark", agrees Rod Cobain, sales manager for Mikro-Gen. "A lot of people just buy the games to play them, they don't



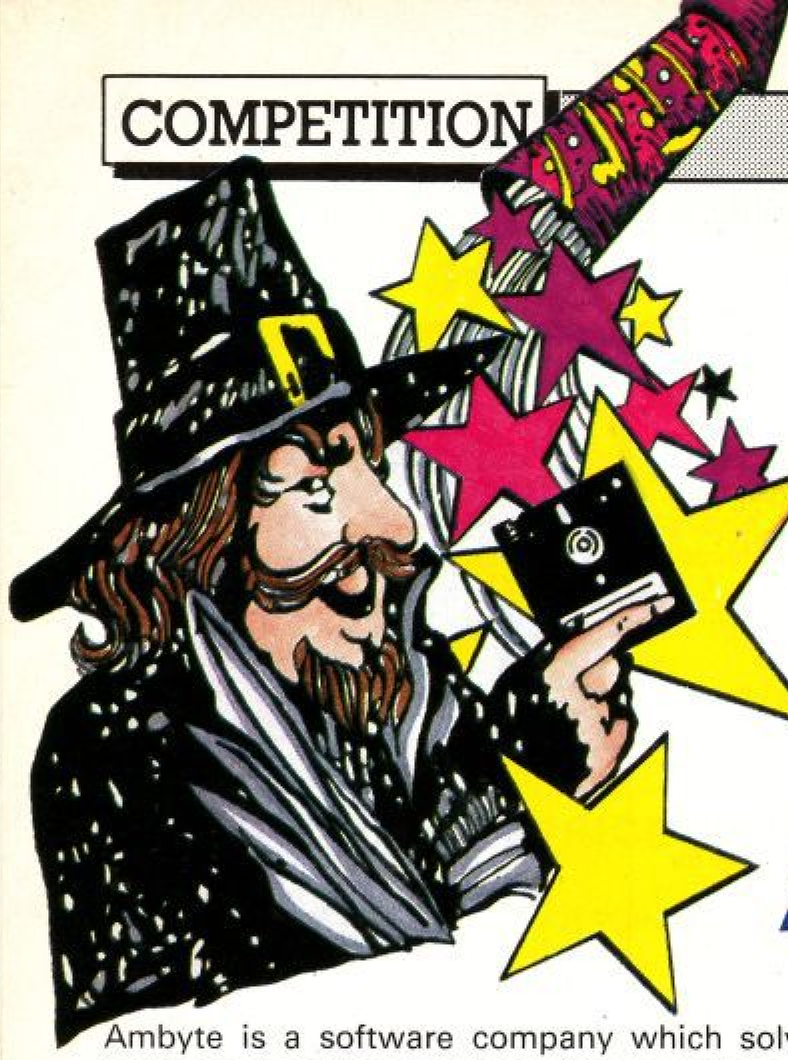
Mike Meek: 'People enjoy playing'

around a number of new titles. One, Frost Byte, has been developed by Chris Hinsley and is based on a flexible character who looks like a piece of orange vacuum cleaner tube and moves like one of those toys that walk down stairs.

It's possible to move this character backwards and forwards and jump. He can also fire, but only in the direction he is pointing. There are several nasties to shoot at and these are strategically placed to prevent you moving from one screen to another.

The game has the same graphic style as Mikro-Gen's previous hit Equinox. The object is to free your pals from the icy wastes by progressing through as many screen as you can – making sure that you avoid the various hazards and pick up the right objects en route.

Interestingly, the first versions of games are produced for the Amstrad. Chris tells me that the background graphics of the screen easily convert to the Spectrum while the sprites slot into



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2. You may photocopy the form but only one entry is allowed per reader.
3. The judge's decision is final. No employees of ACU

The questions

1. In what year did Guy Fawkes attempt to blow up the Houses of Parliament?
   - a. 1066
   - b. 1605
   - c. 1945
2. Who was on the throne of England?
   - a. Boadicea
   - b. Queen Victoria
   - c. James I

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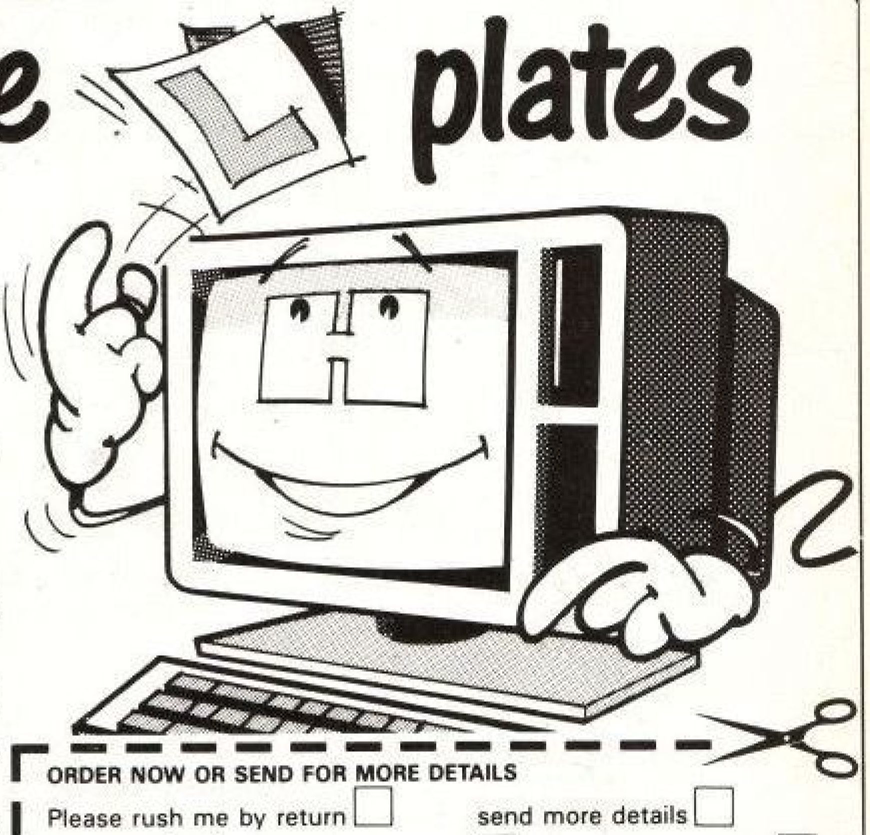
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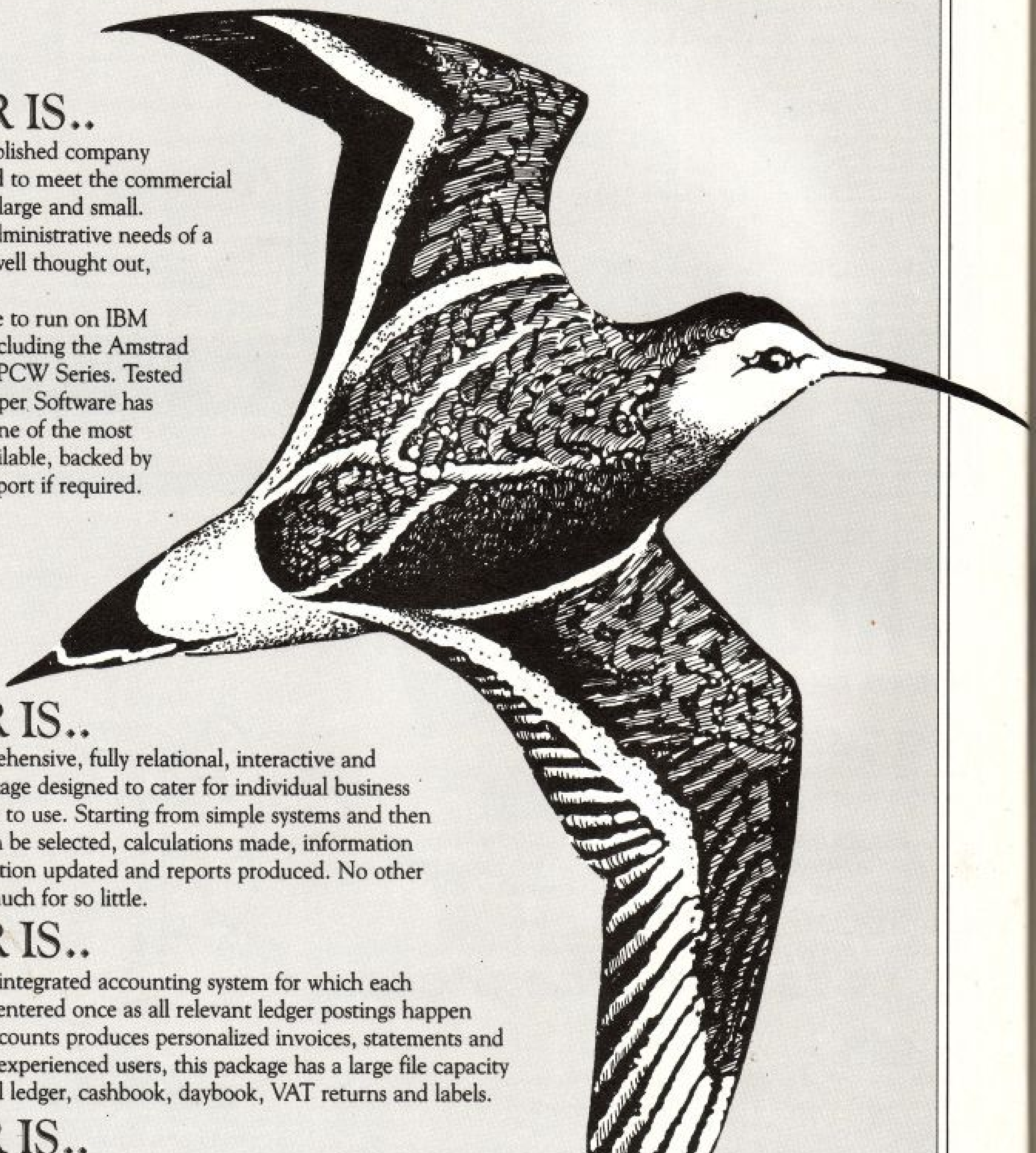
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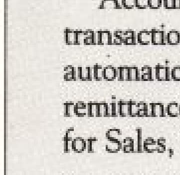
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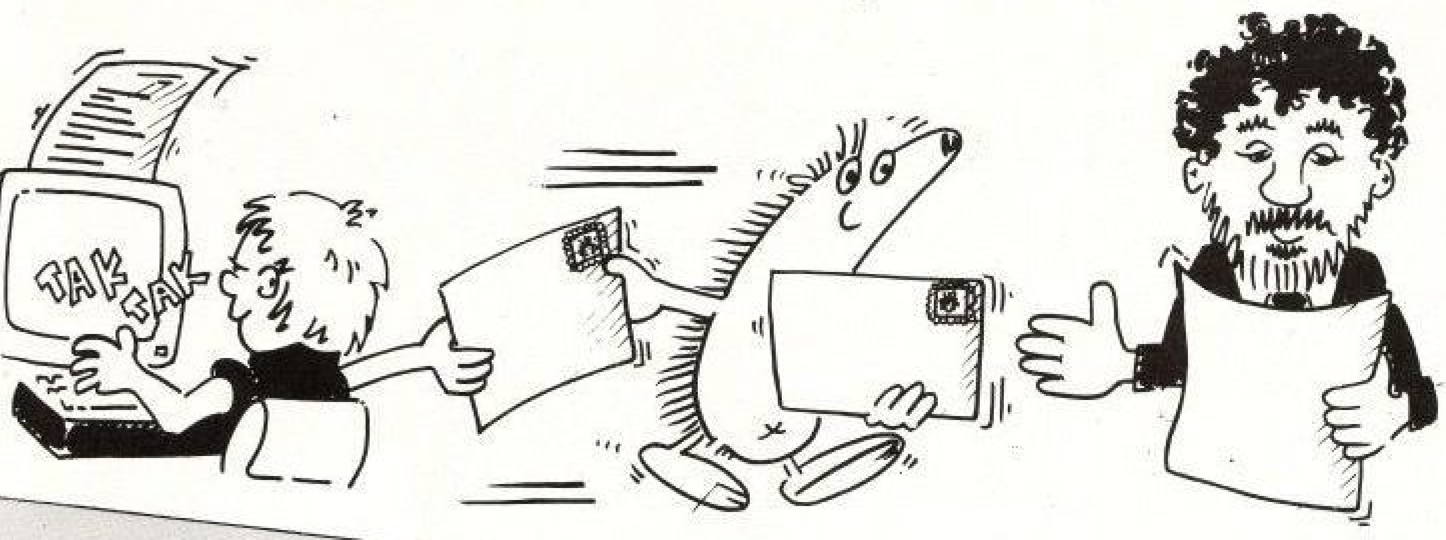
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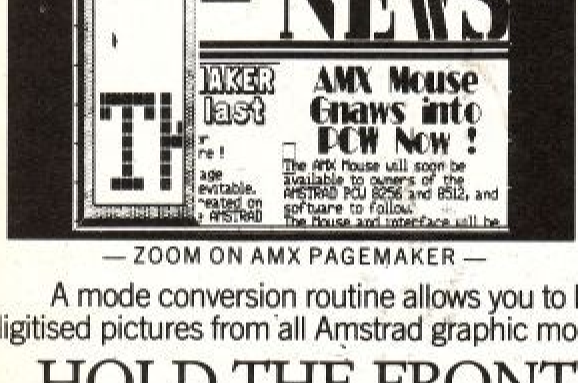
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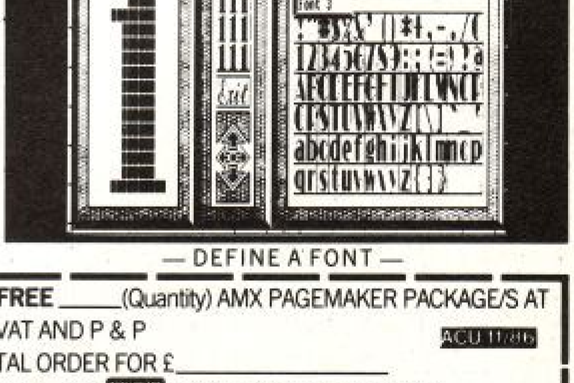
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Shooting a commercial can be boring . . . waiting for something to happen

The PCW goes filming

What do a swimming pool, a spacelite, a fish fryer and a brute have in common? They are all part of the lighting equipment required for the shoot of the latest PCW8256 advertisement.

Amstrad is preparing an advertising campaign. Sally Tyler reports from the set of the latest mini epic.

The venue: Westway Studios located in the west of London. Two studio days were booked for filming enough material for a 40 second television commercial for the PCW8256. Glamorous as it sounds, filming ads can be a boring, time consuming business, often involving many hours of anticipation and waiting for something to happen.

Studio days start early – around 8.30am – and when I arrived on day one the production crew were putting the final touches to an office set we were using.

Amid the hustle and bustle, coffee was being consumed by the gallon as individual shots for the two days to come were discussed by the advertising agency, the camera crew and the production team.

The first impression that you get on walking into a studio is that a lot of people are involved, each required for his own particular expertise. Although this creates more work for the catering staff, it also means that at a moments notice an expert can be called upon to advise within his own specific field to help to achieve the best possible shots in the minimum amount of studio time.

You may think that filming involves only one company supplying both specialist staff and specialist equipment. In fact it's not quite as simple as that. An advertising agency is assigned to the task of designing the contents of the advertisement and ideas for the script.

Delaney Fletcher Delaney, the advertising agency Amstrad uses for computer commercials, had this task and after various ideas had been submitted to Amstrad the final story line was chosen. A film production company provided the team to produce and direct the shoot, and yet another company provided staff, cameras and lighting equipment. Altogether that makes up a lot of people and equipment!

On our first studio day we were using two actors and an actress for some office shots. The idea was to portray three very different and distinct personalties in an office, each sitting at a desk and in front of their treasured PCW8256. The same set was used for each character with only

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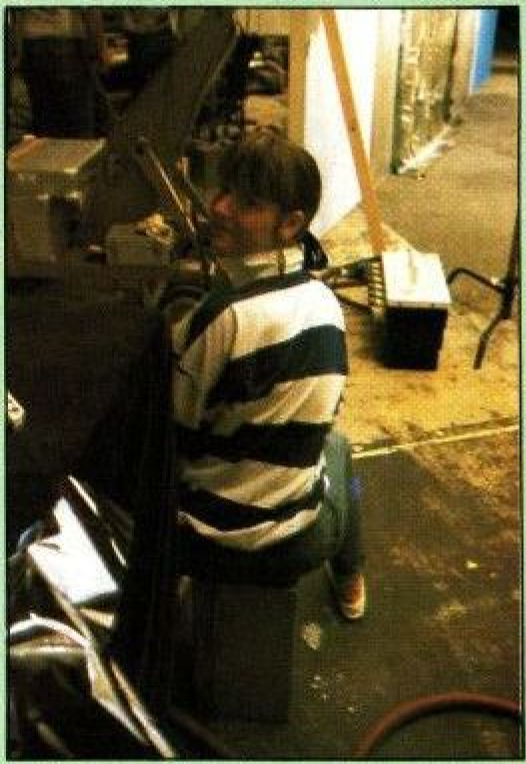
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Behind the junk typewriters a street scene is being constructed

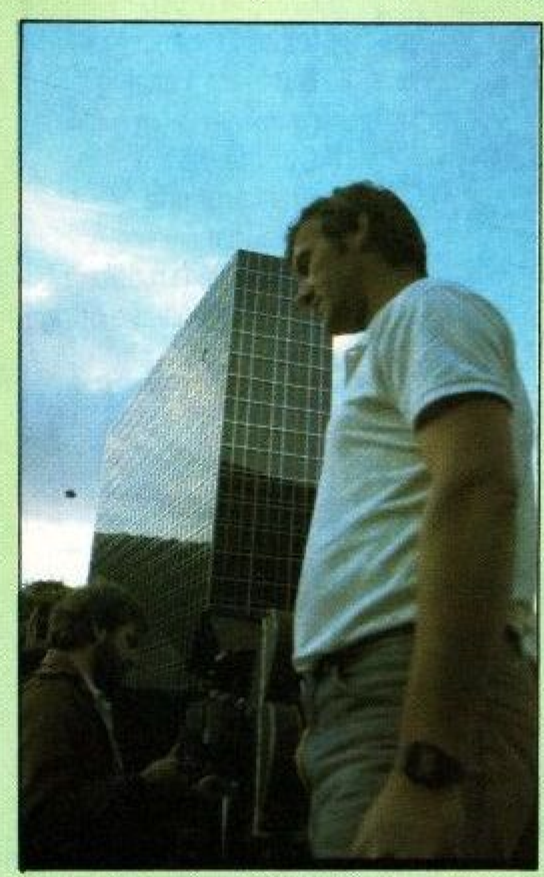


Sally . . . taking a studio break

small cosmetic changes to the appearance of the office.

The biggest decision seemed to be, not where to position the camera or the lights, but which plant to use with which character. After some time it was decided that the mother-in-law's tongue was the most suitable plant for the businessman's office.

Pictures were hung and replaced on the office wall until a suitable picture, plant and character combination was found. With the appropriate atmosphere for each office scene and the cameras and the lights set up, each actor went through a rehearsal of the particular personality that they were to portray in the advertisement.



The 'skyscraper' is 5ft tall

A window had been constructed in one wall of the office set. This was in fact a piece of dark gauze stretched over a wooden frame and lodged into place in the set wall, giving a very good impression of a glazed window.

Behind the window a blue cloudy sky had been painted on to the studio wall. The main role of two actors was to react as humorously as possible to an object seen falling past the office window. This was an old typewriter which had been sprayed with paint to cover all identifiable features.

It sounds an easy enough task, but when the typewriter was dropped from scaffolding above the set it bounced on the floor and could be seen rising above the window ledge. Sawdust was brought to try to solve the problem and it was even suggested that someone lay on the floor to catch the typewriter. I hasten to add that its innards had been taken out the day before!

The only solution was to rebuild the window ledge so that it was a few inches higher. So it was back to the coffee urn for the rest of us while the set designers got to work.

Each scheduled shot is thought through by the production team days before the allotted studio time. However, it is not until everyone is assembled in the studio that the practicalities of a shot can be tested out. If a particular idea doesn't work another is tried until the best possible shots are obtained, however long it may take.

This philosophy proved to be only too true as far as the office shots were concerned. With the window ledge raised and actors at the ready, over and over again the skeleton typewriter was thrown until an appropriate reaction was achieved from the actors and a realistic rate of descent was obtained from the falling typewriter.

For most of us observing the action while sitting on any empty equipment cases this was something of an endurance test since the lights made everyone feel as if they had just spent the morning on the beach in the Bahamas. This was just three of the shots to be used in the ad. After nearly seven hours work enough material had been shot for about 10 seconds of the commercial!

One of the real pleasures of a day in a film studio is the food. Even the most enormous of appetites are catered for. The call sheet assigned three breaks for each of the studio days, the most memorable being the bacon sarnies for breakfast. Breakfast really does taste different in the confines of a cluttered studio.

With the office scene shots finished, the camera was set up to take close up pictures of the machine over the shoulder of each actor. This task proved far easier than the first, probably because it didn't involve falling typewriters.

In the background of all this activity, the set builders were working away on a street scene to be used on studio day two. It was decided that the skip we had hired as part of the set was too large for the scale of its contents, and within minutes, rather than hours, a new skip had been built out of hardboard.

It was fascinating to watch what looked like odd bits and pieces constructed into very realistic objects. As one bystander remarked: "They're even painting the road".

Day two proved to be just as eventful

as day one. As the first scheduled shot involved another falling typewriter, we were all prepared for a long wait. About a third of the studio had been used to create a street scene and as it was such a large area the most powerful of the lighting equipment was installed.

The studio floor was covered in a mass of cables of all sizes, connecting various lights, cameras, a playback system and monitors to a generator housed in a large van in the car park.

Around the remainder of the studio there were abandoned lights and equipment waiting for their turn to be used. In one corner, perched on a table, there was a model of an office block. This was in fact only two small rectangular sheets of smoked perspex, joined together in the corner and marked with a metal grid construction to give the impression of windows.



A skip is built in minutes – out of hardboard

I was interested to see how the model was going to be used to best effect. The time came later in the afternoon, when cameras and crew moved out into the car park with the model, a table, and a miniature typewriter scaled down to 1½ inches.

The model was assembled on a covered table in the middle of the car park, the idea being to use passing clouds as sky. The effect was incredibly good, and we were lucky enough at one point to have a helicopter flying past just to add to the atmosphere.

The only dodgy part of the exercise was that we had no control over the wind. The miniature typewriter had been modelled out of a type of polystyrene and was to be filmed falling out of a window (really a hole) in the model. So it was important to gauge the wind. At one point it even looked as if it might rain.

Back in the studio the scene was being set for the last few shots of the schedule and after two long days, the objective was achieved, enough material on film to put together a 40 second commercial.

And was it all worth it? You'll just have to wait and see.

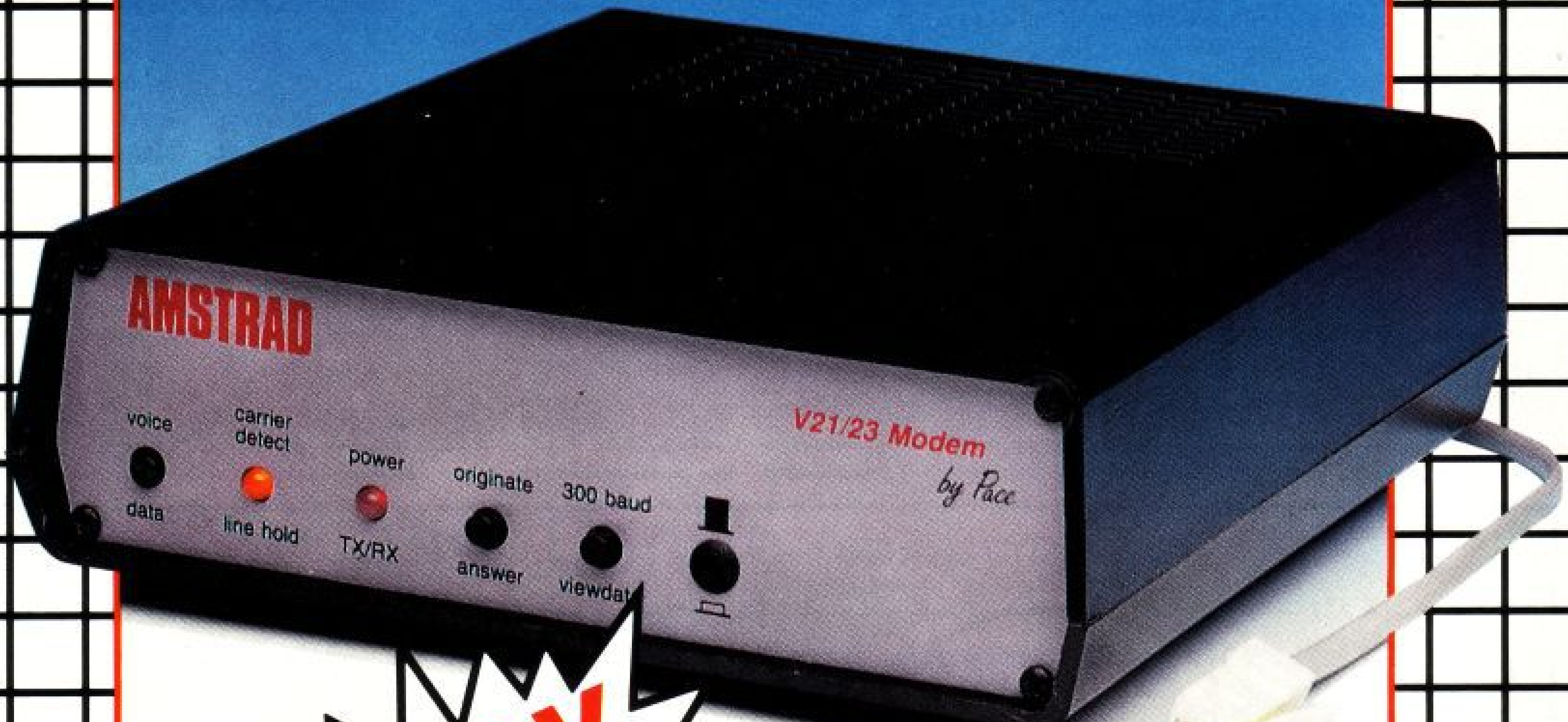
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SOFTWARE REVIEWS



FROST BYTE

Equinox was a superb game, one of the new breed which has helped to keep Mikro Gen programs looking fresh. The problem with producing a game which has originality as one of its strongest points is how to write a follow up. Chris Hinsley of Mikro-Gen has achieved this by taking the spirit of Equinox and building a new game.

Frost Byte is the sequel to Equinox. It uses the same cute 16 colour sprites and rooms with a similar feel. But the gameplay has been changed significantly. Instead of being a floating orb you are now a Keezer. You look like one of those coils which runs down stairs, turning itself end over end. Or to be more accurate you look like the green and yellow aliens from Marble Madness, the ones which jump on the marble and lick their lips.

In your role as a yellow and green liquorice allsort you have to seek out captured friends and release them. As the title would indicate the action takes place on a frozen landscape, a cave which has to be mapped. The CPC does not have a very wide range of blues, so the backgrounds often look a little chunky. The foreground sprites, and some of the large multicoloured monsters are very much better. The Amstrad has five greens, so it's a good job that most monsters are green. The beast on the third screen blinks as if alive.

Once armed your bendy toy can shoot – although the ammunition is limited and you will need to pick up more later. As with Equinox, moving the joystick picks up an object and pushing down again uses it.

There are some magical crystals dotted through the caves, each of which affect your spring. Eating a red crystal speeds you up, but limits the strength of your jumps. A blue crystal gives you the power to leap tall cliffs with a single bound – but slowly. Trampolines add power to your jumps in tight corners.

Author: Mikro Gen
Price: £9.95

Nigel

As winter looms the let's-get-the-game-out-for-Christmas bandwagon rolls on. If Christmas is the O-level exam then the PCW Show is the mock. Software houses try to have their wares ready for the show, but just like revision they never get it done in time. Miss Christmas and you have to wait another year.

Frost Byte was in a pre-release state at the show but will be prepared for the end-of-year software showdown. Both the tasks and the graphics are truly inventive, something to settle down with as the nights draw in.

18/20

Liz

Initally the game seems far too hard, and until I'd mastered the art of jumping over falling drops of water I got nowhere. The monsters are wonderfully inventive. I love the creature featured on this month's front cover.

The rules about what can be shot and what needs to be avoided are a bit vague but once killed twice shy and you should conquer most things with time. The tie-in with a frozen waste seems a bit pointless. Still, at least it's not part of a licensing deal. Frost Byte has a very strong "just one more game" appeal, you'll either love it or hate it. I love it.

19/20

Colin

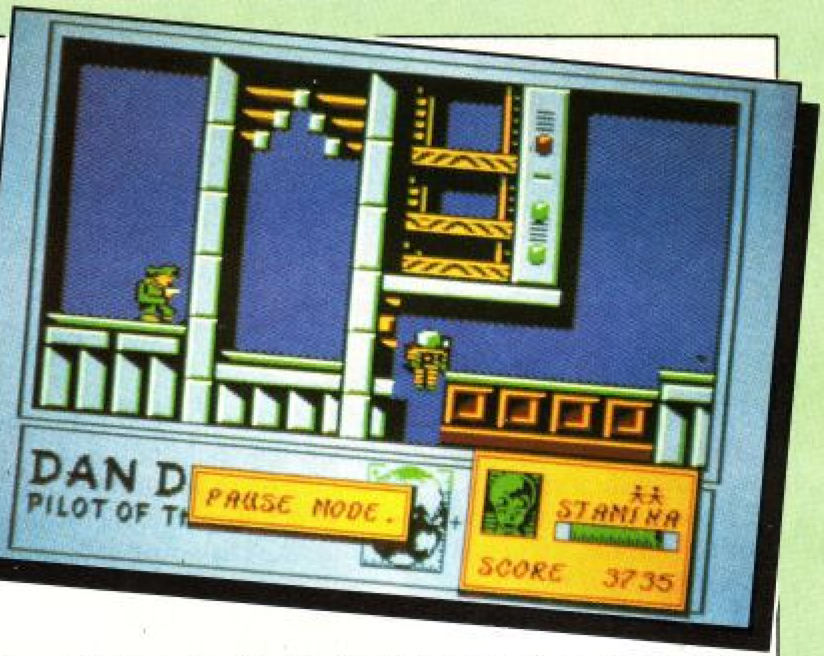
Frost Byte from Mikro-Gen continues the Equinoctal vein. Instead of a sphere which floats hither and thither, your joystick controls a slinky-like spring which arches its way through the monstrous infestations of an icy cavern. Picking up and using things is again courtesy of a downward twitch on the stick, and again there's an intelligent use for everything.

The usual batch of laconic horrors await you, and not a few cleverly contrived traps. The way in which the spring moves lends itself to some gymnastic manoeuvres to circumvent obstacles, and working these out is half the fun.

A lot of thought has been put into this playable game, and it takes a lot to get the most out of it.

18/20

DAN DARE



Computer games and comics have a lot in common when you stop to think about it. Stylised graphics, simple story line, action abounding and not too many complications.

The first comic-computer crossover that I can remember was Superman for the Intellivision games console and that was about six years ago. Plus a change – this time it's a superhero from this side of the Big Pond who's saving the world on your Arnold.

In this week's issue: The Mekon has set an asteroid hurtling towards the Earth and will only stop it if the people of Earth hand over power to him. Dan Dare, Pilot of the Future, goes into space to blow up the asteroid and thwart the Evil One's despicable plans.

Can Dan do it? What will happen to Digby, his sidekick? Will all the Mekon take over be an obscure magazine? Read on, read on.

Once Dan gets to Schloss Mekon he's pretty much on his own against the hoards of Treens – the blighter Mekon's henchmen. True, Dan, Professor Peabody and Digby do get a lift to the asteroid that the Mekon is using to threaten earth. However, the Prof takes Dan's rocket out of harm's way, and Digby gets captured by the Treens almost from the word go. Dan is thus all alone in a big bad asteriod.

Fortunately his trusty laser gun is to hand and into battle he goes. The Treens are floating aliens who attempt to either shoot or capture our hero and he also comes under fire from various automatic gun emplacements that encrust the innards of the planetlet.

Once Dan has been hit a few times he becomes unconscious and is transported to a jail set deep below the surface. The same fate awaits him should he slip while jumping over the shafts sprinkled about the place.

The jail itself presents no problem as the lock's broken (hurrah), but Dan loses vital time in finding his way back to where he was via the Mekon's elevator system.

To get to the detonator mechanism he has to cross a chasm. There are four bridging pieces to be placed, then Dan can release Digby and activate the detonator. Then he must flee like the clappers to the Mekon's spaceship to make good his escape.

Will he do it? Only you know, as you guide a behatted Dan through the cavernous interior of the Mekon's tool of devastation. Marvel at the detailed walls. Thrill to the zap of zarjaz (sorry, wrong comic) lasers. Gasp at Dan's death defying bounds. Cringe as he crouches from the naughty Treens.

His exploits are detailed in a faithfully rendered comic-book script which appears from time to time on the bottom of the Mode 1 screen. Likewise the imminent demise of the Earth is chronicled by a graphic globe slowly going green. Once the grot reaches Antarctica, Dan's heroism has been in vain.

Everything is joystick-based and some delicacy is called for at times. There's a lot of carefully-instilled atmosphere in this game, and not a lot to complain about. But I always thought Dan Dare was Sloanespeak for "on the floor"...

Author: Virgin
Price: £8.95 (tape), £12.95 (disc)

Nigel

Dan Dare is another classic from Virgin. The play is the run, jump duck and fire type where the obstacles are gaps and robots. The automated defences attempt to either shoot Dan or swoop down and cart him off to clink. I can't quite work out why there is no door on the jail.

The graphics are excellent, depicting sombre high-tech girders and rails rather than Sorcery's sombre rustic walls and bars – perhaps this has something to do with Virgin's working envipronment.

Play is definitely trickier than in Sorcery, where you have to be pixel accurate and get your timing to the nanosecond. Some individual screens require mastering but there is always a way round – if you can only find it.

Well worth a look for fans of this type of game.

18/20

Liz

There are some games which seem to work and others which don't. Just when everyone thought that 3D games were passé Ocean breathed new life into them with Batman.

And Dan Dare proves that programs which used to be called ladders and platform games and are now known as arcade adventures still have life in them.

Dan Dare is addictive, the puzzles are clever, there are plenty of aliens to shoot and the place is huge. If saving the world is the bag you are into then this is the game to buy.

19/20

Colin

I suppose that a comic base allows almost any scenario to be dragged out, dusted off and presented as a novel concept.

It's a shame that Virgin have chosen a bog-standard platform game for Dan Dare's first ram-based romp.

They've gone to town on the artwork, with intricate threedeeish walls, floors and lifts and there are sufficient nasties to keep sitting-room superheroes busy.

The joystick control is very pernickety and it's very easy to step forwards while trying to fire upwards and then plummet to captivity.

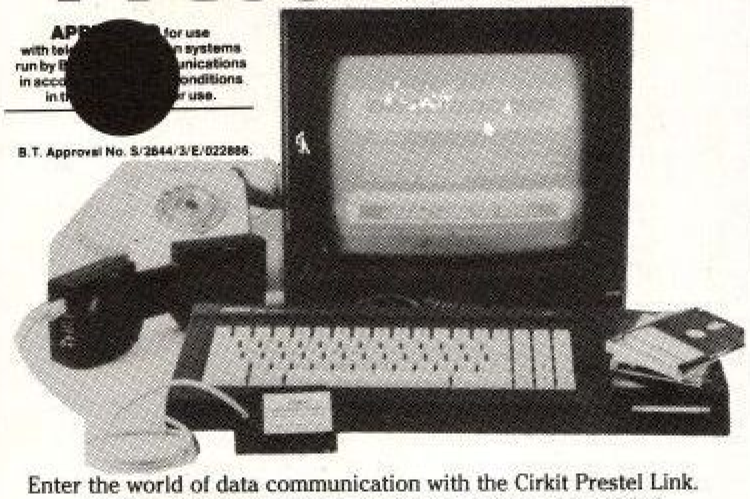
It's OK, but nothing to queue up for.

16/20

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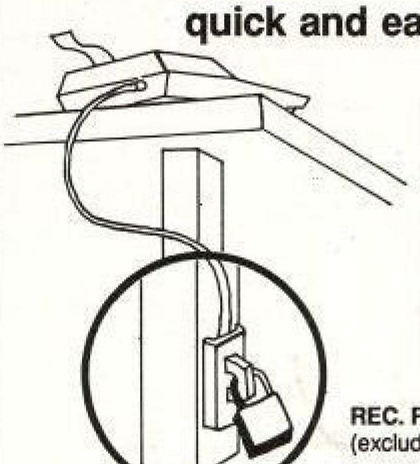
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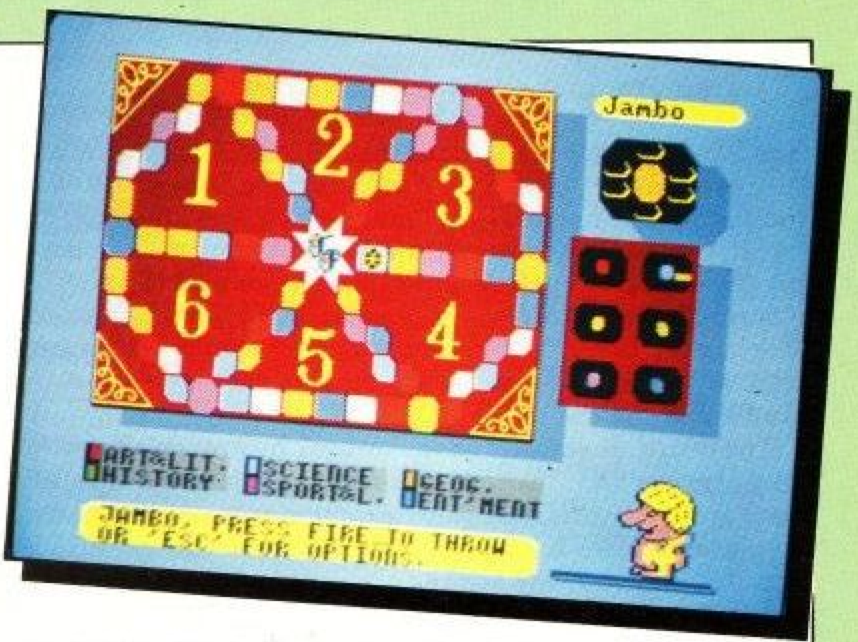
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TRIVIAL PURSUIT



You can't have missed it. Trivial Pursuit has been the board game of the Eighties. Neatly mixing Homo Sapien's compulsive competitiveness with his obsession with oddness, Trivial has belied its name as life-long friendships are shattered over the number of snakes in Hawaii.

Briefly, Trivial involves collecting six cheese-shaped pieces (wedges) from around a wheel shaped board. The wheel is divided into squares, most of which have a subject such as science, entertainment, geography and so on associated with them. Land on a square, and you have to answer a question on that subject. Get it right and you can throw the dice again for the next square, else it's the next player's go.

Six of the squares are special. Land on one, answer correctly and you win a wedge for that subject. When you've got a full set you have to make for the hub of the wheel. Once there, you have to answer a question on a subject chosen by your opponents – and you've won.

The wheel structure of the board gives enough freedom of choice to allow elements of strategy to creep in. Do you go for Entertainment, which you're good at, or Science, which is nearer the wedge you want but less easy to answer? And so it goes on, into the small wee hours . . .

That's the board game. The computer version, happily, is even better. One of the disadvantages, I felt, of the low-tech game was that one person had to be Grand Inquisitor and thus couldn't play. On the Arnold this part is played by one T.P., a gambolling homunculus who picks a number between one and six for you. When you've picked your square, he wanders off to his library.

The library is a well-appointed room with a blazing fire, candle, hi-fi and other paraphernalia. Here, after pacing the carpet, T.P. asks a question. This can either be a textual query (like the original), musical (in three-part harmony), or graphical. There is a rich assortment of graphics which appear on a roll-down screen after the library lights have dimmed. Musical questions are played on the hi-fi, which has an animated bar-graph display just like the real thing. This sort of attention to detail occurs throughout the game.

Pressing the fire button on the joystick reveals the answer. This is a bit of a departure from the board version, where if you got an answer wrong the questioner didn't have to reveal anything, but works well. Other additions to the original include a performance sheet for each player, a settable timer for the questions and a one-player mode.

There are sixteen blocks of questions (on the disc version) and a new one gets loaded in if a block gets exhausted during play. You can also load in a new block whenever you want – it's a good idea to do this every time you play, as this avoids repetition of questions.

Everything (apart from typing in names at the beginning) you need to do to play the game can be done from the joystick. This makes things much easier if there's more than two of you, as it's simpler to pass a stick around than a computer . . .

Everything about this adaptation recommends itself. The questions themselves are as singularly quirky as the real thing and the presentation is pretty damn hot.

Author: Domark
Price: £14.95 (tape), £19.95 (disc)

Nigel

One day someone will take a computer program and turn it into a board game. For the moment things work the other way around. Scrabble was a programming triumph (watch out for the Joyce version out soon). Trivial Pursuit on the computer really adds to the game.

There are 3,000 questions – 1,000 from the original Genus I version, 1,000 new ones and 1,000 which use graphics or sound. When you have heard all questions you can buy a new tape. You can find out who has answered the most questions, and who got the most right – an end to the argument that your younger sister beat you because she was just lucky.

18/20

Liz

I just love trivia. Where was Monopoly invented? (Atlantic City). Which members of the Royal family can vote? (All except the Queen). Prove to your friends that you know more useless facts than anyone else. My friends now refuse to play the board game with me – I'm not a bad loser, I'm a dreadful winner. "Come on, everyone knows that".

You can still argue over whether Mao Sa Tung is the same thing as Chaiman Mao. If Domark isn't careful it's going to get a very good reputation.

19/20

Colin

There's only one way to test Trivial Pursuit and that involves a weekend, close friends and lashings of Liebfraumilch. Domark's doings pass this test with honours.

The MC, one T.P. (a Piman lookalike), squeeks, shuffles and skips his way through fiendish questions in the best tradition. The frills Domark has added are really useful, and as a whole it's even more fun than the real thing.

Great graphics, great 'gamesplay', great fun. It almost hurts me to say this, but . . . a classic.

20/20

THE FOURTH PROTOCOL



The name's Preston. I work at the Ministry. I keep an eye on the most deadly people in the country: The Other Side – and I'm not talking about Atari. I'm the newly appointed head of security and I have to face the most challenging assignment of my career. A group of Russian agents are planning to smuggle a nuclear device into Britain, breaking the Fourth Protocol. They intend to set it off in such a manner as to make America seem responsible for the "accident". My task is to detect the agents and foil the plot.

The Fourth Protocol is a famous book by Fredrick Forsythe. Okay, so you and I have never read it, but lots of people who don't spend all their time playing computer games and reading stupid magazines have. Otherwise it wouldn't be a bestseller would it? Anyway, now you can play it as a computer game. It's in three parts and you must complete the first before going on to the second and third.

The object of the first part is to retrieve some vital Nato documents. As Preston, head of security, you have the facilities of a computerised command centre at your disposal. There are various methods of communication such as memos from other department heads, phone calls and information from agents in the field and reports from other departments.

The action, in this first part of the game, revolves around a series of icons displaying the options you can take. Three computer terminals show situation reports, memos and so on. When there is a message waiting, an icon is displayed on the screen of the terminal. Moving a pointing finger icon to the relevant option and pressing Enter will give you a further menu with more icons.

For example, the memo option will print the memo on the screen and display a further menu. This shows you a filing cabinet to store the memo, a dustbin to throw it away, an eye to read it and a picture of a computer to return to the command centre. Certain memos require immediate action and off you go to more sub menus.

One of the most important actions is assigning surveillance teams to various suspects that emerge in the course of your investigations. This is done through a camera icon. 'Watchers' make regular reports of 'chummies' activities, allowing you to make various decisions on the way – arrest, pass on false information, deport and so on. Constant vigilance in the command centre is necessary, as it is very easy to miss a phone call or important message and lose a vital lead. Codes, phone numbers, limited resources, staff morale and success rates add to the complexity and realism of the game.

All control is from the cursor keys and Enter, with the cursor stepping to each icon in turn. There is no joystick option but there is a pause, save and load game facility.

Author: Ariolasoft
Price: £14.95 (tape), £19.95 (disc)

Nigel

Visually, Fourth Protocol is less than interesting, but if you are willing to forego a little colour and are into a little light thinking, FP is a real treat.

The pace that the info comes in at is the factor that gives this game its addictive quality. You have to assign watchers, examine info that has just come in, work out coded passwords, note telephone numbers and still make snap decisions about the various suspects. There are red herrings and routine security head duties to carry out, generating the right sort of civil servant atmosphere.

And all the time, in the back of your mind there's this little voice saying "you missed something".

17/20

Liz

How do you write an adventure game without asking the player to type in pages of text? Well how do you write an operating system which doesn't need loads of text? Simple. Apple did it with the Macintosh and Digital Research produced GEM for the Amstrad PC. If they can do it for something as boring as a disc operating system then surely this front end can be tagged onto an adventure game.

The Fourth Protocol has been around on the Spectrum for quite a while, but it's new to Amstrad users. Some of the features make the game feel very real. You need to make an appointment to see your boss, hire taxis and use the London underground.

Loading in three parts is a pain and the game is so difficult that not very many people will see the final section. Look out for the film on soon.

14/20

Colin

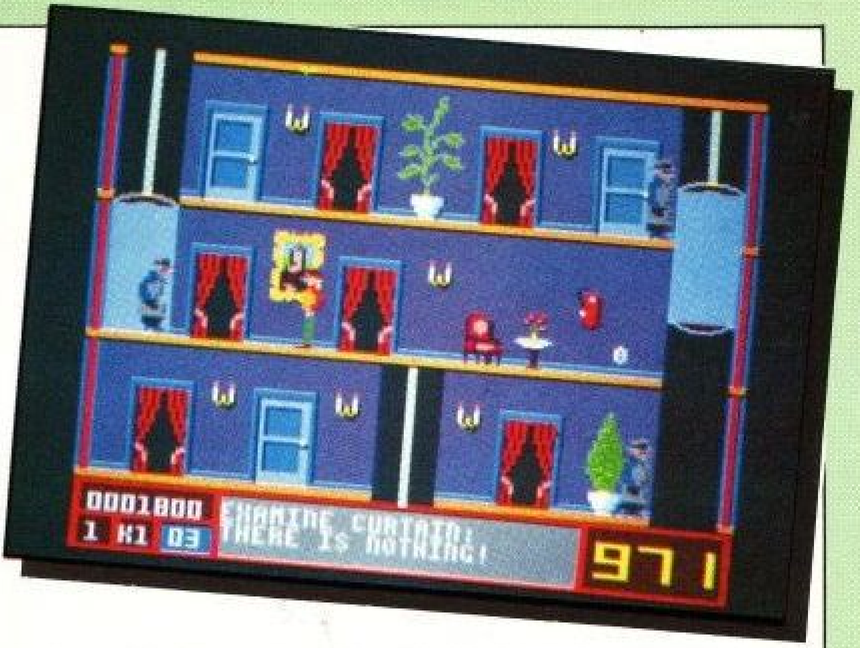
Yet another move the pointer around and select icons game. This is quite a good one though, which succeeds in generating a degree of authentic spy atmosphere.

I got a bit fed up with reviewing the security arrangements in Building 17, especially as this gave me less time to sort out those Commies and the boss got a bit shirty.

There are plenty of things to do in the game, but no option to plant secrets on someone then arrest him. You can't call the two-colour graphics the most exciting in the world but the game is nonetheless quite playable. Move over Smiley!

14/20

MISSION ELEVATOR



The first task in this spy caper is to find the English instructions hidden away in the densely packed and fiercely multilingual information sheet. Once this is achieved, the story unfolds. A hotel has been the cover for the Central Intelligence units of the FBI (eh?), but a hostile Secret Service unit has the place under siege. They hope to coerce the US Government into releasing their buddies by threatening to blow said hotel sky-high with a bomb that's going ka-booom real soon now.

Good guys inside this four star can of worms located the bomb, and the passwords to its electronic detonator. However, the bad guys caught on and disposed of the men in white hats. But the disposees have managed to hide the info all around the place.

At this point Control decide to send in their superagent, called (no, don't laugh) Trevor. Imagine . . . "My names Bond. Trevor Bond." Giggle. Straight face now, because Our Trev's in dead schtuck. He has to get to the bomb on the 62nd floor, and in so doing get all the bits of the password. Trouble is, the hotel has some weird architecture, and every eight floors there's a locked emergency exit. To pass this, Trevor must find the porters for those eight floors. And the porters, sensibly enough, have locked themselves in rooms.

So Trevor has to find the master key. Each and every floor is swarming with enemy agents, called Trevorski, just dying to squeeze a shot off at the bod of our hero. So even with the master key to open the doors to find the porter to cross the exit to get to floor 62 things ain't easy. It's a good idea to bear in mind the ancient Chinese adage, "Not only porters hide behind locked doors". And some people have vital information, but are reluctant to leak the lentils without being bribed. Together with the fact that cluelettes are scattered everywhere, you can see that Our Man In the Hotel has his work cut out. And you're him.

The action is presented in a cutaway view of three floors of the Terrorist House Forte. As you move up and down via the elevators, the screen pans to follow you. Enemy agents spring forth in profusion from behind curtains and make for your floor. There they pull a pistol and take potshots at you. You can crouch or leap out of the path of the bullet, and fire back. While you're crouched down you can examine the various objects scattered around and about.

Everything is nicely portrayed on screen. The enemy have an evil, sordid air about them, the chairs, tables, pictures and other hotel-ish items are very convincing and those Doric columns . . .

All aspects of the game are controlled by joystick or cursor keys, including little games of dice and poker which the computer throws at you from time to time to help you keep your slush fund liquid.

The animation's not bad at all, the action's brisk and there are lots of little surprises to keep the interest going. An action game with lashings of strategy, spiced with humour.

Author: EuroGold
Price: £9.95

Nigel

Gosh, another mission. Does this make me a missionary? Well at least this game is something new. A madcap, shoot everything in sight, rush around the screen game or a find the objects and use them in the right order adventure? The choice is yours.

The game starts with a naff print out of your orders but don't switch off. This is followed by some superbly smooth fast graphic action. You must search the large hotel for objects and clues to complete your task. Out to stop you are a gang of secret agents with an unlimited supply of manpower. Shoot 10, shoot 20, shoot 50 and they still keep coming. Don't they worry about paying pensions in this game?

The pace of the game is reminiscent of Rambo, Green Beret and so on. So if you liked them, you'll like this.

19/20

Liz

Games from unknown software houses should be treated with caution, but the excellent stuff from France which has been migrating this way in recent months shows that the Europeans can code. This first immigrant from Germany heralds the birth of the EuroGold label.

The people who wrote this know their stuff. It's a shame they went for Mode 0 – I always feel that the higher resolution of Mode 1 merits the sacrifice of colours. The game scores in that you can play the whole thing with the joystick, although using it to enter your name is a pain.

Still, a fun game with plenty of "one more go" appeal.

18/20

Colin

It's Eurospy time, folks. Our dashing agent dashes around an hotel, getting the gen to defuse a bomb. On the way bullets, bribery and booze play a part in getting past the swarms of ne'er-do-wells. Quick wits and red-hot reactions won't hurt, either. And the graphics are delightful.

If you ever get bored with the game (I haven't yet), you can always wonder why the Danish loading instructions look uncannily like English . . . You'll always get a lift from this one.

17/20



STAR STRIKE II

If there are any extra-terrestials sniffing around Planet Earth, they're probably pretty paranoid by now. Since Space Invaders first soft-shoe shuffled their way down to a phosphor planet, the computer games industry has had the Aliens in its sights.

Starstrike II continues in this well-worn vein. The Outsiders, bless their little plutonium socks, have been routed from Federation space where, one presumes, they were up to no good whatsoever. Now Federation command is sending Starstrike II ships to knock out what remains of the Outsider's home planet's defence before marching in to liberate them. They probably won't appreciate being liberated, but that's not your problem.

Your problem is to penetrate the defensive screens thrown up around the planets, knock out any spaceships that happen to want to stop you, and knobble computers, reactors or whatever else keeps the planets going.

There are three types of planet, industrial, military and agricultural. Military planets have a central battle computer and are heavily defended. Industrials are dependent on the obligatory nuclear reactor and are less well defended. Agricultural planets have a computer which looks after all the robot farmers, are easiest to get to and probably feed millions. That's not your problem either. War is hell.

Your controls on this noble quest are fairly simple. Looking at your spaceship you can see a speed gauge and indicators for fuel, laser life and force field strength. There's also the symbol of the star system you're currently attacking, and the type of planet enjoying your attentions.

You can hop from system to system by using your support unit. This also refuels the ship. On arrival at a system, and having left the comfort of your unit, you can choose a planet to attack. If you choose a military planet the first thing you'll encounter is an orbiting space station. Shoot bits off it, dock, and you'll have a short-cut past the extra shields that these planets have. Otherwise, you'll have to run the gauntlet.

The shields are planes with small, heavily defended openings in them. You can fly straight through the planes but this depletes your force-field something rotten, so it's a better notion to fly through the openings and zap anything that moves.

Then comes the dogfight, just like any other 3D dogfight. Following that, fly along a trench zapping ground installations (sounds familiar?) and then plummet down a ventilation duct to dispose of the Very Important Hardware at the bottom. Ahem.

During a skirmish with other ships a head-up display clicks on, giving ship type, distance and inclination. Elite-like, an exploded ship can drop a fuel pod which you can pick up and use.

All the various stages are well and truly 3D. Quite the most impressive parts of the game are the solid geometric bits and bobs that float around the Lesser Magellanic Cloud (chez Outsiders). In that respect it's quite as good as Elite. But it has none of the subtleties that hallmarked that game – it's a zap-em-up pure and simple. And if that's what you want, that's what you'll get.

Author: Firebird Gold
Price: £9.95

Nigel

Ooh eck, another galaxy to defend from galactic tyranny. There is a lot to shoot at, the rotating space station is very impressive, the walls in space very difficult to navigate through and the deep space battle makes Starion look like 3D invaders. Just as you master one section there is a new challenge.

Once you are good enough to last a few waves you find that it takes a very long time to play Starstrike II, so a save game option would have been useful.

Elite without all the boring space trader bits.

17/20

Liz

I'd been waiting so long for this game that it couldn't possibly have lived up to my expectations. I had seen the Spectrum version and watched demos at computer shows. Real Time has an enviable reputation, and with clever maths and efficient coding produces video effects that George Lucas would be proud of. These make you feel as though you are there at the helm of a small spacehip, fighting the foe.

Starstrike I was good but suffered from being in Mode 0. This has crisp mode 1 graphics, with stipples to add the necessary colours and make objects look solid. Technically brilliant, suitably fast and generally the biz.

19/20

Colin

Cor – unbridled zapping! Awesome graphics! Galactic jingoism! Whizz around zapping pugnacious polygons and generally making the place radioactive. If anything, Real Time has gone overboard on the rotating solid thingies, as your ship feels sluggish and unresponsive and the gamesplay is so shallow.

OK if you're not tired of Star Wars and Starion, but me, I'll stick to Elite.

12/20

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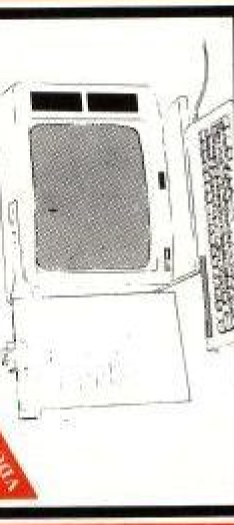
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DEACTIVATORS

The most dangerous job in the Air Force is bomb disposal, so quite sensibly they get robots to do the dirty work for them. There is no compassion for a robot – but that is your vocation in life.

The building is full of bombs – there is probably some good reason for this, but you have to save it. Unless you can use your droids to take the bombs to a window and throw them out. What the neighbours will think is irrelevant.

The building is in 2D, across and down, but the rooms are in 3D. As your robot moves around a room he (are robots male?) gets convincingly larger and smaller. The building is full of walls – otherwise the ceiling falls down – and not all the walls have doors in them. Some of the floors have holes which allow you to fall from level to level and others have poles which help your metal man climb up levels.

To jump from one area of the building to another there are transporter pads. Unfortunately whoever planted the bombs also disabled the computer which operates the transporters. To get them working again you'll have to find the missing circuit boards and repair the computer. Even with the transporters working you cannot move a single 'droid through the whole building. And some of the bombs are not accessible to the robot which can get to the external window.

To get a bomb from the depths of the building to the robot which can then dispose of it you have to partake in a cross between Russian roulette and pass the parcel. Your robot must pick up the bomb and throw it through an internal window to another robot, which can then take it to the next robot or to the exit.

To get the bomb through the window you need to line yourself up on the tiled floor and select the correct angle of elevation. Bombs are fragile, drop them four times and BOOM – the bomb, robot and room are all destroyed. Catching the bombs is made more difficult by varying gravity levels in different rooms. In later buildings rooms rotate and make things very confusing.



The hardest thing of all is avoiding enemy droids. These follow you from room to room, even if you use a transporter. Just touching one spells instant doom. Your only escape is to run away, jumping through holes in the floor until your pursuer finally cracks. Some doors are electrified, as are some of the fireman's poles – you'll need to fix them before worrying about the bombs.

The game gets progressively harder and should satisfy the most dexterous games player.

Author: Ariolasoft
Price: £8.95

Nigel

These robots are not my cup of oil. You can't shoot the enemy and getting the transporters to work is a fiddle. There is nothing more frustating than running from a robot, jumping on a faulty transporter and re-materializing in the same place to greet instant death.

Maybe if you played the game from the robot's viewpoint it would be more exciting, albeit even more dificult to play. I found the selection of which robot you controlled awkward and soon hung up my joystick.

9/20

Liz

Deactivators is good because it is original, but it is not exciting – more absorbing and mind taxing. It is certainly a game which takes some learning and should not be attempted without reading the instructions. You need to learn the layout of the buildings, making a model in your head – so adventure fans should feel at home.

I found the game too hard, all that running away from robots made me feel like Dr Who. The sense of achievment on finishing the first level is worth the graft.

16/20

Colin

I found this horrifically difficult. It was only the cuteness of the metal men which made me continue – that and the insistence of the editor.

Deactivators is a thinking game. You need to have a good look around the building, work out your routes and then execute the moves. It's the game that goes on inside your head which matters – what happens on the screen is less important.

That is not to say that the graphics are poor, they are competent and effective, adding to the game. Deactivators is not something you can load up for a quick zap – more an evening's entertainment.

13/20

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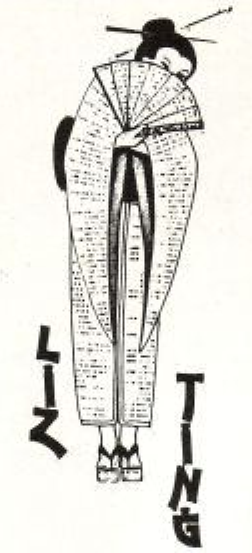
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MISSION OMEGA

There's a huge alien spacecraft hurtling towards Earth, codename Omega. In one hour it will be blown out of existence by Earth defence systems. As the man on the spot – you happen to be commanding the nearest vessel – you are given orders to intercept and explore the spacecraft. To do this you must build a number of robots capable of exploring and overcoming the defences of the spacecraft and then supervise the mission from your vessel.

Robot games must be coming into vogue, this is the second we've had this month. The game is of the icon and menu driven sort where you drive a little arrow around and press fire to select an option.

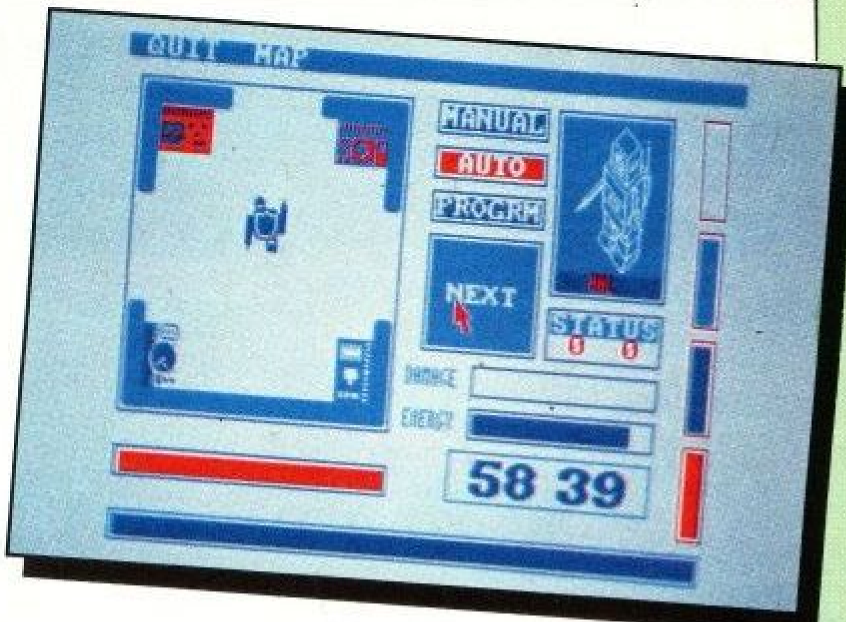
You start on the main screen where you can select either map, build, control or launch mode. Launch means you've completed the search and the missiles can be launched. If you do this before the search has been completed you have failed the mission but it does give you a score.

Map shows you maps of the space craft, one small and divided into quarters, the other filling the rest of the screen and showing an enlarged version of a quarter. Only the explored parts of the ship are shown on the map. The large map shows the position of each of your robots. Something that isn't mentioned in the instructions is that pointing to a place that has been explored and pressing fire will show the room at full size with all its features.

The build section allows you to create and name a number of robots. You have a limited amount of material from which to create robots so you can either have a small number of heavy robots or many light ones. They can have different speeds, weapons, power units, methods of locomotion and sensors. Different sensors have different ranges.

The control section allows you to command the robots in the search of the ship. Selecting Manual, you can move the robots with the joystick and press fire to shoot. There are two other methods of control. Automatic sets the robot off exploring under its own steam. (Actually there isn't a steam driven robot. A real oversight on the programmers' part).

When it can find no more rooms to explore it will stop and report. Also, any nasty little alien robots that it finds it will engage in combat, which is useful as combat is a little tricky on manual. Finally, there is program mode which can be used to send the robot to an appointed place. However, you can only send the robot as far as the range of its sensors.



There are lots of things to find on the ship. Some are to be picked up and these are displayed on the control screen when a robot collects them. You can also find transporter pads to get to other quarters of the ship, remarkably (for an alien ship) they are marked Otis – the lift company. Some corridors are barred by force fields. There are devices dotted around the ship that deactivate these, but not necessarily close at hand.

There are various options to choose. A continuous, 'hurry up' tune plays throughout the game but it can be switched off. Every screen has colour bars which can be selected and the colours changed. And the game can be played with either keyboard or joystick.

Author: Mind Games
Price: £9.95

Nigel

I enjoyed playing Mission Omega, finding it quite addictive. Obviously the secret of success is to build the right sort of robot. More information about this would be nice but the instructions are very sketchy indeed. However, most things can be worked out in time.

My only quibble is that I would have liked the robots to be a bit more programmable. If you could direct one to go to a certain place, or home in on another robot, it would have made things a little easier. It takes quite a long time to play a game so there are hours of enjoyment in it.

17/20

Liz

It is difficult to have a fair crack at a game when the instructions conspire not to instruct. I remember reading a copy of Byte magazine about five years ago which described a game where you could design robots and then set them to do battle in a computer generated world. You could program your little tank and then trundle it off to do battle with a friend's tank.

When I first saw Mission Omega I hoped this was a version for the CPC. Wrong, your robots are all on the same side and difficult to program. Marvin, where are you?

10/20

Colin

Mission Omega starts promisingly enough. First build your robots, then send them on an exploration of a giant spaceship. Trouble is, the instructions give very few clues as to what to do, what you're looking for or how to look for it.

The game degenerates into a endless wander around a maze, where the only thing that happens is that your batteries run down.

There's no doubt it looks swisho, but beneath that icon-pointer-window business there isn't much of a game.

14/20

HARDBALL

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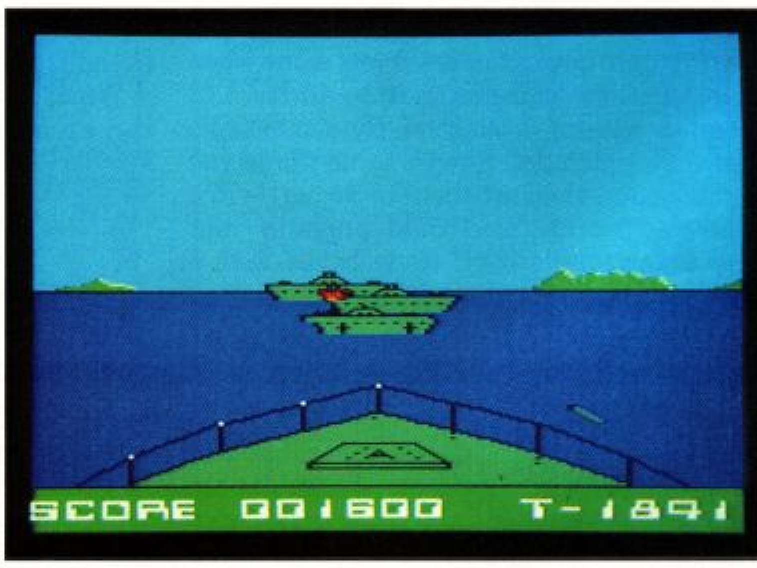
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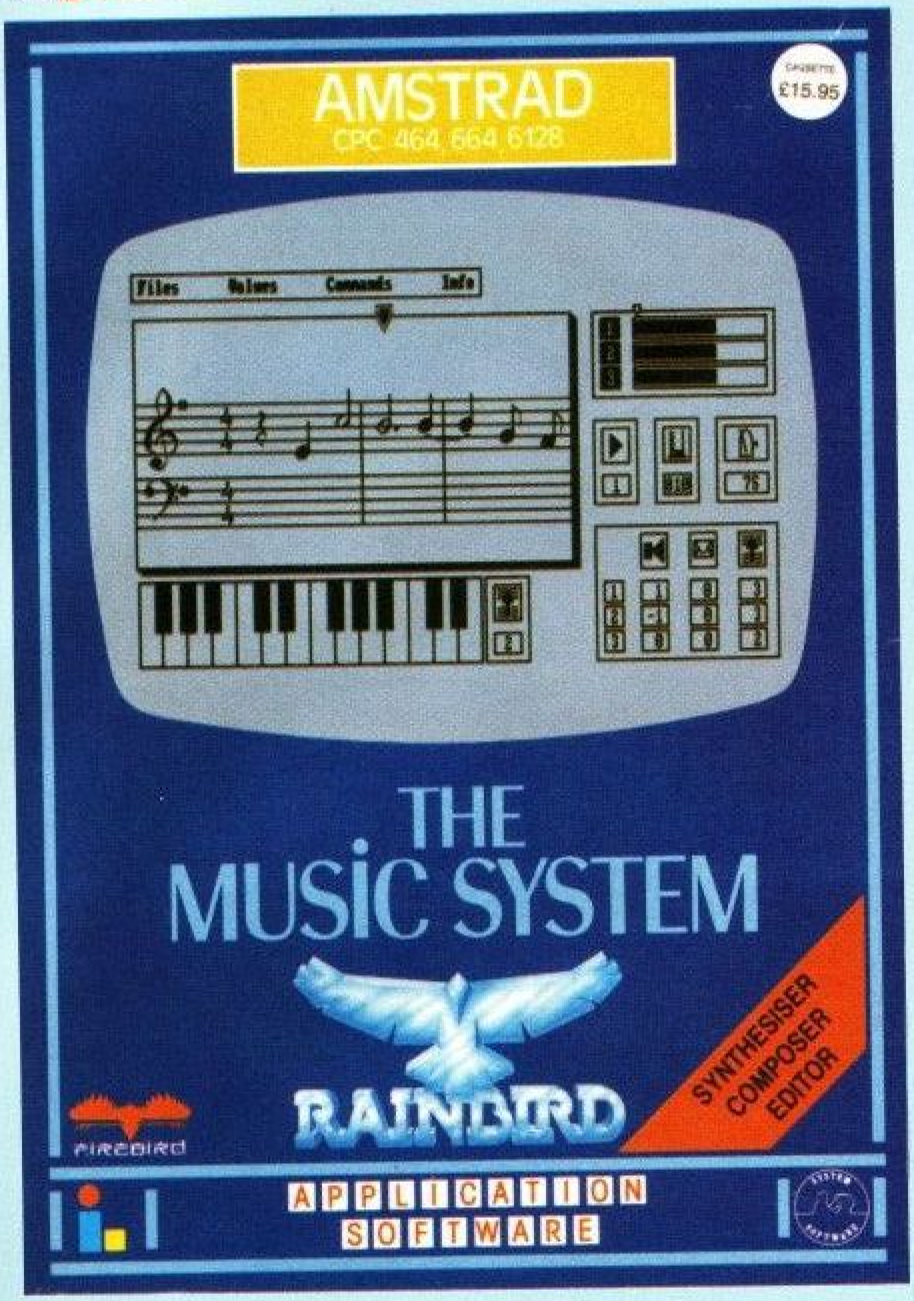
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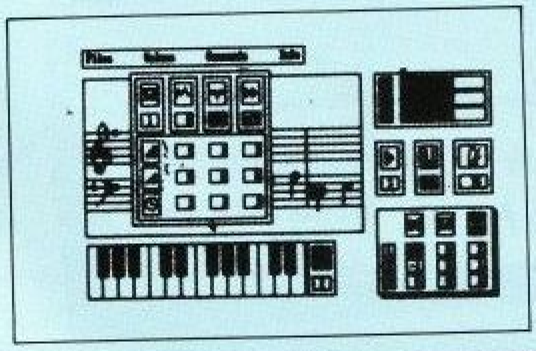


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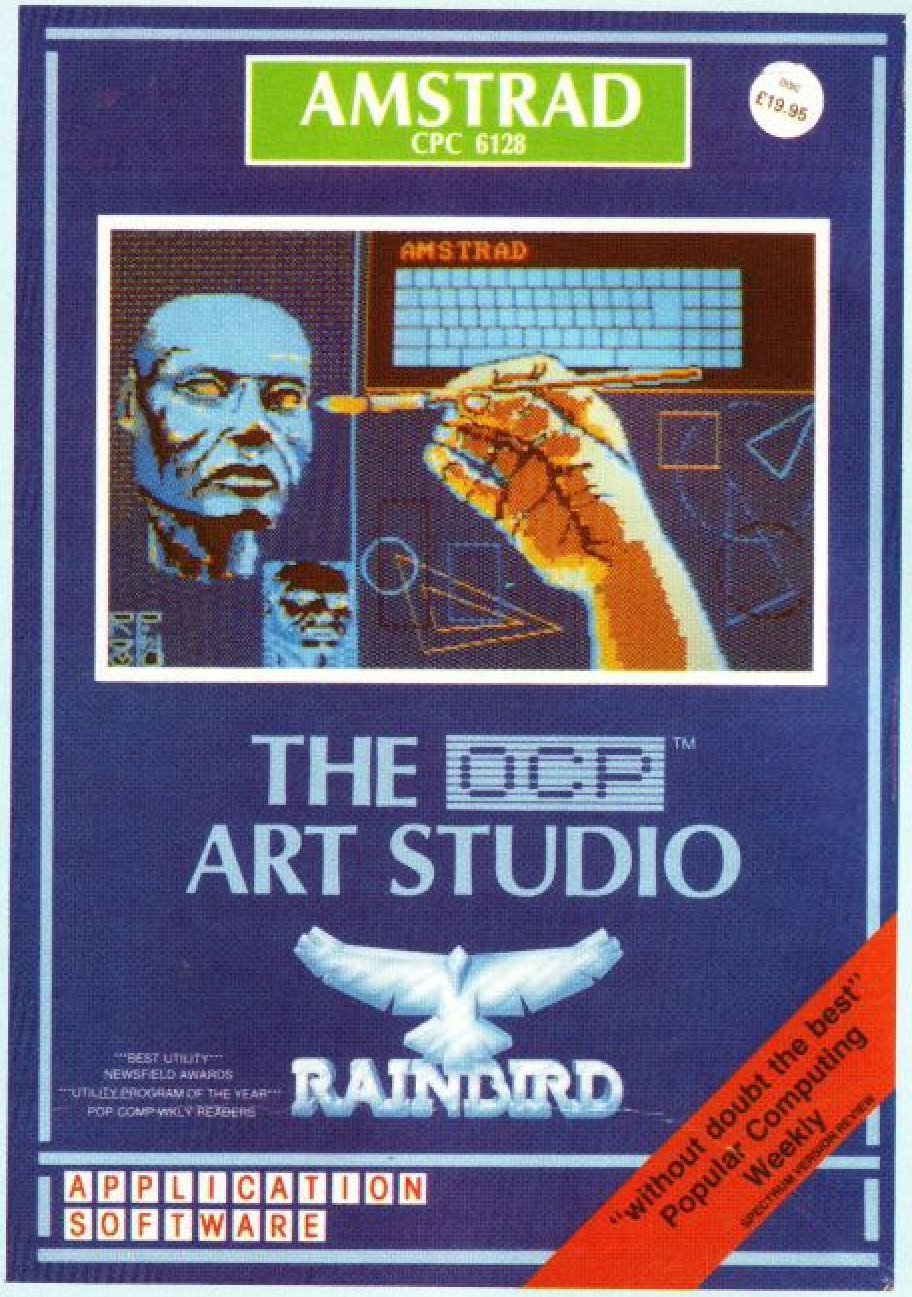
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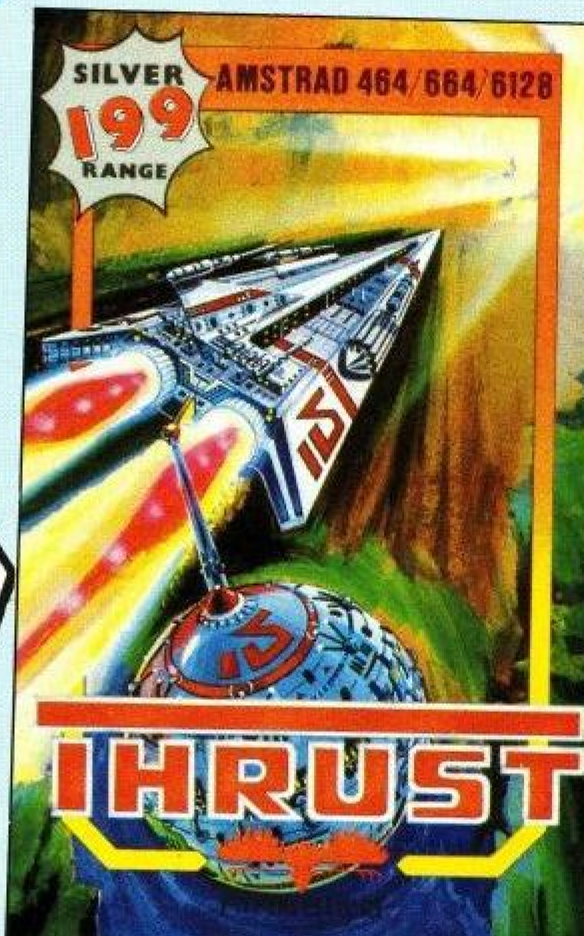
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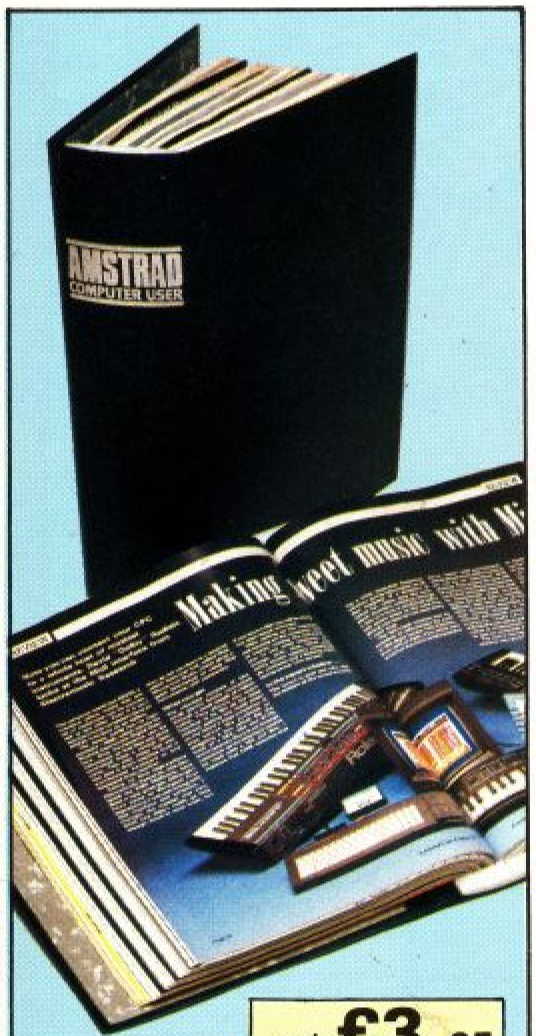
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PROTEXT FEATURE SUMMARY

File commands — Super fast Load, Merge and Save, Cat, Print (to printer/screen/file)
Cursor Movement — By character/word/line/paragraph/screen, to start or end of line, to start or end of text, to line number, to place marker, to margin.
Inserting and deleting — Insert/overwrite mode, insert character or line, delete character forwards or backwards, delete word. Delete to end of line.
FIND and REPLACE — Wildcards, all or part of text, case specific, whole word or part of word, find control codes.
Block commands — Move/copy/delete/save/print/format.
Markers — 2 block markers and 10 place markers may be set anywhere.
Formatting — Word wrap, right justify, variable left and right margins.
Ruler lines — Unlimited number of ruler lines to define margins and tabs. Decimal tabs.
Print options — Headers/footers, page numbers, variable line spacing, variable page length and margin sizes, conditional page throws, odd and even page features, continuous or single sheets, multiple copies.
Printer features — Including emphasized, condensed, double-strike, elite, italics, enlarged, pica, NLQ, subscript, superscript, underline. Built in Epson printer driver, ability to easily define your own printer driver and save to disc.
Help feature — Optional on screen command summaries.
Built in character sets — Danish/French/German/Italian/Spanish/Swedish.
Other features — Non break space, display tabs, returns and hard spaces, soft hyphens, word count, case conversion, copy ruler, 60 page easy to read manual with full index and glossary of terms.

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BENCHTESTS

A standard file of 775 words (4,785 characters) was used to carry out the following benchtests (all timings are in seconds):

	PROTEXT	TASWORD/AMSWORD
1 LOAD text file	4.7	10.2
2 SAVE text file	4.9	18.9
3 Re-FORMAT paragraph (85 words)	0.4	15.3
4 Re-FORMAT entire text	2.5	Not Possible
5 Move directly to start of text	under 0.1	2.2
6 Move directly to end of text	0.2	2.2
7 REPLACE 'the' with 'THE' (45 occurances)	1.7	34.1
8 SCAN entire text	2.2	7.2
9 MERGE file to centre of text	4.0	Not Possible
10 MERGE file to end of text	3.8	12.4
11 MOVE 85-word paragraph	under 0.1	6.8
12 PROGRAM LOAD TIME		
DISC	12.9	14.6
ROM	Instant	Not Available

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This major addition to the PROTEXT word processor combines a fully flexible mail merge program allowing PROTEXT to produce individualised documents in one single print run.

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Read data from file or keyboard.
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Print file direct from disc or memory.
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Typewriter mode – for envelopes etc.

PROMERGE PLUS —
PROTEXT ENHANCEMENTS (ROM version only)
All the features of PROMERGE together with –
Background printing – edit one file while you print another.
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Cut and paste – any block of text can be moved to any position – allows multiple column layout.
Tasword users – automatically converts your old text files.
Calculator – a simple on screen calculator for those invoice totals etc.
6128 OWNERS
PROMERGE PLUS MAKES full and sensible use of your extra 64K memory but also functions with smaller files on the 464 and 644 machines.
Also uses D K Tronics 64K RAM expansions.

PROSPELL

★ Checks your spelling ★ Proof reads your documents ★
★ Solves your word puzzles ★

— How to use PROSPELL —

The spelling checker can be called directly from within PROTEXT to check the current file in memory or any file on disc. Alternatively, PROSPELL will check any ASCII file produced by other Amstrad word processors, including Wordstar type files.

— Features available —

Add words to the dictionary/Correct word/ignore word/Look up correct spelling/View word in context/Delete words/List words/Initialise new dictionary....PLUS....

— Word Puzzle Features —

The 30,000 word Dictionary can be used in a number of useful ways.

FIND WORD — Your can enter a word pattern using ? for an unknown letter and * for a group of unknown letters. PROSPELL will list all words in the dictionary which match this pattern.

ANAGRAMS — PROSPELL will even list all anagrams of any word pattern you type in.

Together these features will prove invaluable to crossword solvers and compilers.

— THE POWER OF PROSPELL —

Some spelling checkers work as slowly as 150 words per minute.
PROSPELL works at up to 2000 w.p.m.

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The Least Significant Bit

Everyone knows about the clone Amstrad has just launched. But only the lucky thousand who went to the event know about the clone which was used to launch it – a clone of the Hitchhiker's Guide to the Galaxy. Most of the shindig was hype, showing how incredibly Amstrad had done, but there were some good bits so here is a taste of what went on.

As the audience assemble in the auditorium the PA is pumping out the sound track from Dallas. As the house lights dim to black we find Nigel Braithwaite sitting in his armchair watching TV. He is muttering to himself as he gets involved in the action. At a crucial moment in the dialogue we hear fuzzy static. Nigel curses, he gets up muttering, goes to the set and gives it a thump, the static gets worse and builds into an electronic crashing noise. The lights go out. It is dark.

Nigel: I knew I should have paid my TV licence.

Ford: *(Who has appeared in the blackout – if that is not a contradiction. He is American).* You mean you have to pay to watch that sort of garbage.

Nigel: It's very good garbage, Clive James says so . . . *(Suddenly realising he is not alone).* Who are you? And more to the point why are you sitting on my knee?

Ford: Gee, am I? Sorry. I guess I got my coordinates wrong. This doesn't look like the sub star system of Andromeda Alpha. I should be on my way to witness the most significant event in the history of the universe.

Nigel: In Brentwood?

Ford: Hell no. Nothing of any meaningful significance ever happens in Brentwood. *(Too right – Ed.)* I'll re-adjust the coordinates and try again.

There are lots of flashing lights as Nigel, Ford and Nigel's chair are teleported. Nigel is found slumped in his armchair looking rumpled and bewildered, his hair sticking up on end. He looks around for a second with his mouth open . . . then lets out a great yell. Ford immediately adopts a karate pose, then seeing that it is Nigel relaxes.

Ford: Gee you kinda startled me.

Nigel: I startled you! Just who are you and why is your face green?

Ford: A healthy diet and plenty of fresh air.

Nigel: This isn't really happening!

Ford: Since you tagged along inadvertently, I'd better explain. I am Intergalactic Corparte cadet XR3i – but my friends call me Ford – and for the last 15,000 meghedrons of discrete temporal contiguity.

Nigel: You sound like an Amstrad user manual.

Ford: I've been carrying out a research project as part of my Doctoral studies.

Nigel: *(Cynically.)* Dont tell me you're trying to find the secret of the Universe.

Ford: Don't be asinine – we did that in grade school.

Nigel: Pardon me for asking, but where are we?

Ford: Where I was trying to get before you got in the way – the planet Gammahedron. One of the nicest little places in Andromeda Alpha. Thankfully the tourists haven't discovered it yet. It's also the home of the second most powerful computer in the Universe. *(He walks over to the computer, followed by Nigel.)*

Nigel: It's a bit big isn't it? Does it come all included, or do you have to buy the extra bits?

Ford: This is arguably the most rational thinking machine ever designed.

Nigel: But can it play Roland in Time?

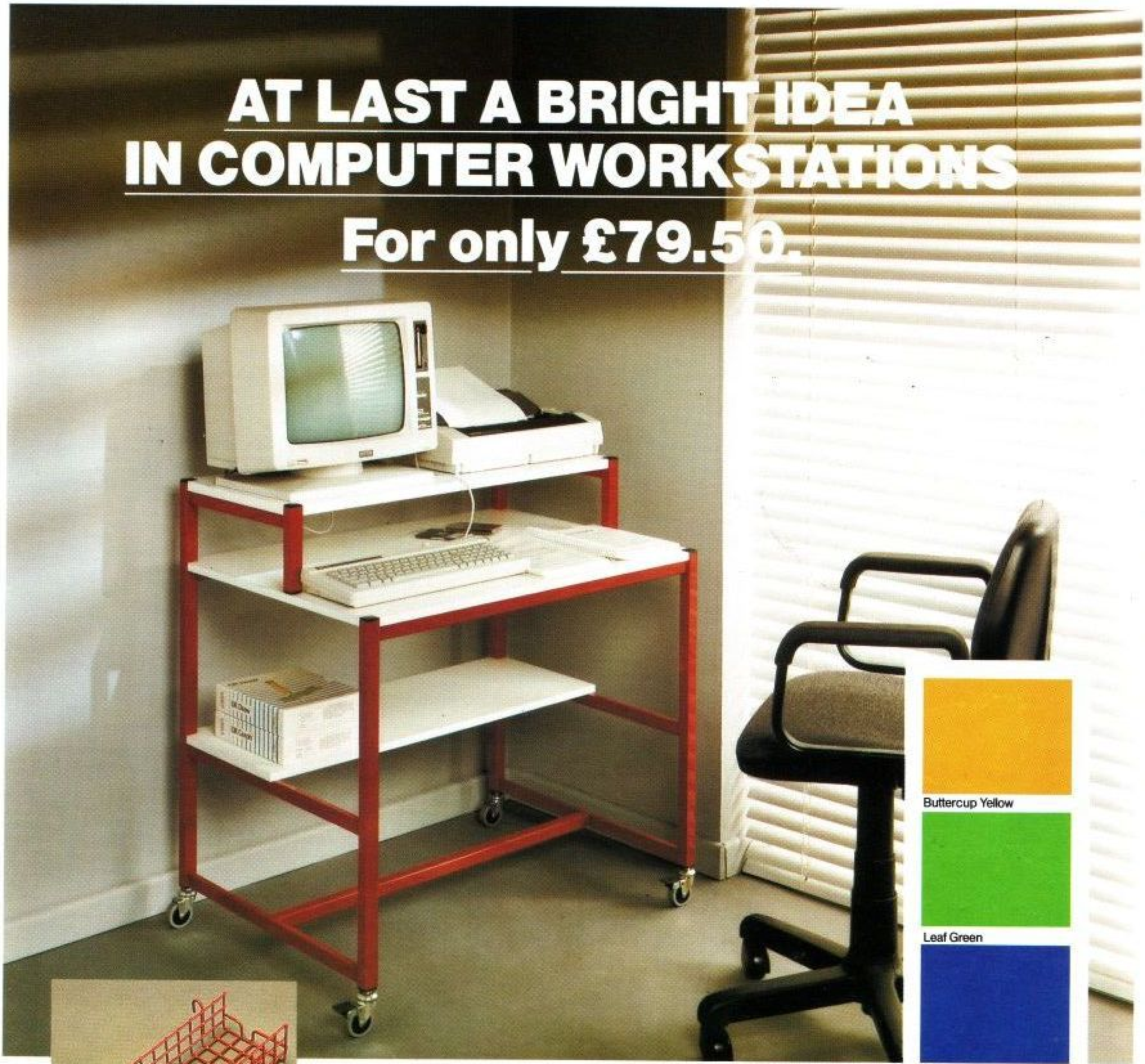
They push some buttons and the computer tells them how wonderful Amstrad is. It then goes on to describe the new PC and shows how much cheaper the 1512 is than the opposition. But how much cheaper?

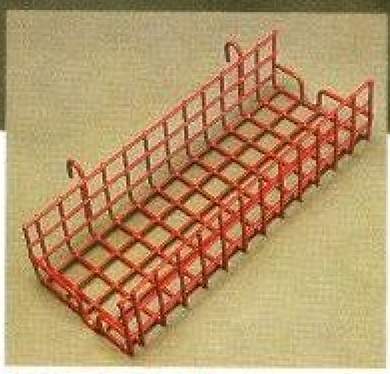
Only one man knows – Alan Sugar. He rushes down the stage in a cloud of smoke. Well he was supposed to but considered the idea a bit undignified and settled for a stroll to the podium.

IBM may not sue, but will Douglas Adams? Interesting fact time: Roland Perry and Chris Anstey of Amstrad and William Poel of NewStar went to school with Douglas Adams.

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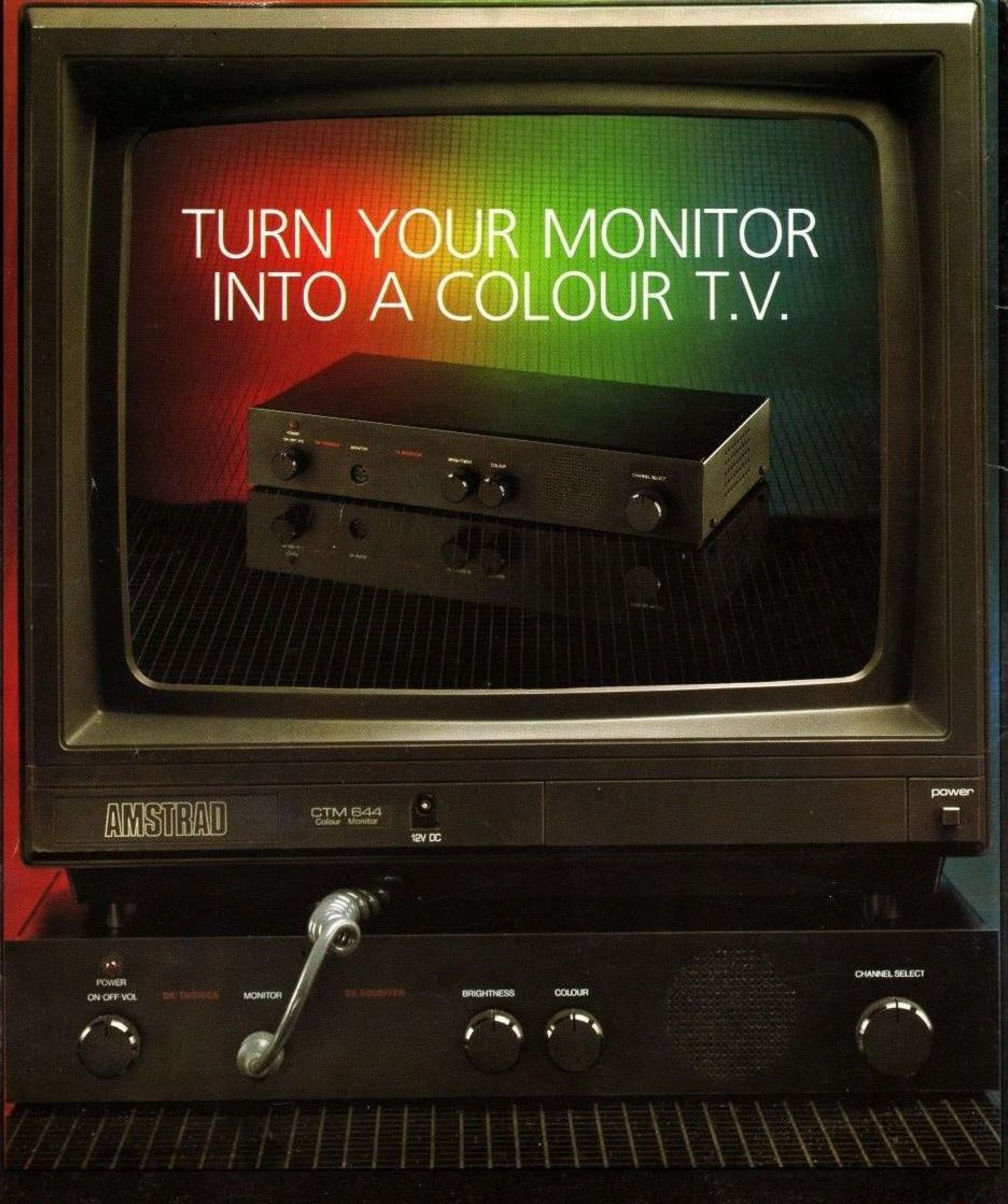
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